ST FRANCIS PROPERTY OWNERS NPC: PROPOSED ST FRANCIS BAY COASTAL PROTECTION PROJECT, ST FRANCIS, KOUGA MUNICIPALITY, EASTERN CAPE PROVINCE

Archaeological Impact Assessment

Prepared for: **St Francis Property Owners NPC**

Prepared by: **Exigo Sustainability**

Email info@exigo3.com
Tel +27 012 751 2160
Fax +27 086 607 2406

Postnet Suite 74,
Private Bag X07,
Arcadia, 0007

Vat nr: 4910184854
Registration nr: 2006/011434/07

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www.exigo3.com

ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) OF AREAS DEMARACTED FOR REHABILITATION FOR THE ST FRANCIS BAY COASTAL PROTECTION PROJECT, ST FRANCIS, KOUGA MUNICIPALITY, EASTERN CAPE PROVINCE

Conducted for:
St Francis Property Owners NPC
CES

Compiled by:
Nelius Kruger (BA, BA Hons. Archaeology Pret.)

Reviewed by:
Gregory Shaw (CES)

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Name	Institution
Deon Pienaar	St Francis Property Owners NPC
Gregory Shaw	CES

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DECLARATION

I, Nelius Le Roux Kruger, declare that –

- I act as the independent specialist;
- I am conducting any work and activity relating to the proposed St Francis Bay Coastal Protection Project in an objective manner, even if this results in views and findings that are not favourable to the client;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have the required expertise in conducting the specialist report and I will comply with legislation, including the relevant Heritage Legislation (National Heritage Resources Act no. 25 of 1999, Human Tissue Act 65 of 1983 as amended, Removal of Graves and Dead Bodies Ordinance no. 7 of 1925, Excavations Ordinance no. 12 of 1980), the Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment (SAHRA, AMAFA and the CRM section of ASAPA), regulations and any guidelines that have relevance to the proposed activity;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this declaration are true and correct.

Signature of specialist
Company: Exigo Sustainability
Date: 9 December 2019

EXECUTIVE SUMMARY

This report details the results of an Archaeological Impact Assessment (AIA) study subject to an Environmental Impact Assessment (EIA) process for the proposed St Francis Bay Coastal Protection Project in St Francis in the Kouga Municipality, Eastern Cape Province. The project entails the proposed rehabilitation of the St Francis Bay frontage over a linear area of approximately **2.7km**. The report includes background information on the area's archaeology, its representation in Southern Africa, and the history of the larger area under investigation, survey methodology and results as well as heritage legislation and conservation policies. A copy of the report will be supplied to the South African Heritage Resources Agency (SAHRA / EC-PHRA) and recommendations contained in this document will be reviewed.

Project Title	St Francis Bay Coastal Protection Project
General Project Location	S34.159684° E24.834225°
1:50 000 Map Sheet	3424BB
Farm Portion / Parcel	Goed Geloof 745
Magisterial District / Municipal Area	Kouga Municipality
Province	Eastern Cape Province

The history of Eastern Cape is reflected in a rich archaeological landscape. The province is well known for its contribution to Stone Age research and various South African archaeological cultures have derived their names from cave sites in the larger Port Elizabeth landscape such as Klasies River, Albany, Wilton and Howiesons Poort. Significantly, the intensive utilization of marine resources by San hunter-gatherers (dating from as old as 6 000 years ago), Khoekhoe pastoralists and KhoiSan (dating from the past 1 800 years in the region), manifests in the archaeological record through hundreds of shell middens (large piles of marine shell) dating to the terminal Pleistocene and Holocene that litter coastal areas along the Eastern Cape and specifically St Francis Bay. River mouths and estuaries were popular areas for hunter-gatherers and pastoralists to live because of the wide variety of food resources within easy walking distance, i.e. shellfish along the beach, fish in the estuary and game in the nearby hills. Later, Bantu-speaking tribes moved into this area from other parts of Southern Africa and settled here. White farmers, settling in the area since the middle of the 19th century, divided up the landscape into a number of farms, which even today form the framework for agricultural, urban, residential and other forms of development. Binneman (2009) indicates that the coastline south of Port Elizabeth once housed large numbers of archaeological sites but many of these important archaeological features have been destroyed by the development of the coastal towns and many were covered with dune sand and vegetation. The St Francis landscape has been developed extensively during the last decades where large portions of land have been transformed for agriculture and urbanization. In addition, coastal erosion, development and previous rehabilitation projects have transformed much of the coastal dunes in the project area. Cognizance should be taken of archaeological material that might be present in surface and sub-surface deposits. The following recommendations are made based on general observations in the proposed St Francis Bay Coastal Protection Project in terms of heritage resources management.

- The archeological site survey did not locate any archaeological sites or material in the project area of the St Francis Bay Coastal Protection Project area and it is highly likely that heritage sites may

have been lost due to coastal erosion, through coastal development or during previous ocean front rehabilitation projects where by extensive revetments were constructed in recent years. It should be noted that the "Community Garden" and the "Two Harbour Walk" situated to the south of the project area near Harbour Road could hold meaning and significance to local residents and potential impact to these receptors should be addressed during the Public Participation process for the project.

- Considering the localised nature of heritage remains, the general monitoring of the development progress is recommended for all stages of the project. Here, all construction activities must be monitored by an archaeologist/heritage practitioner or alternatively a person must be specially trained, for example the ECO, to conduct the monitoring**.** Construction managers / foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. Should any subsurface palaeontological, archaeological or historical material, or burials be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately.
- It is essential that cognisance be taken of the larger archaeological landscape of the area in order to avoid the destruction of previously undetected heritage sites. It should be stated that it is likely that undetected archaeological remains might occur elsewhere in the project landscape in subsurface despots, along pristine coast dune-veld, near water sources and drainage lines and fountains which would often have attracted human activity in the past. Also, since Stone Age material seems to originate from below present soil surfaces in eroded areas, the larger landscape should be regarded as potentially sensitive in terms of possible subsurface deposits. As Palaeontological remains occur where bedrock has been exposed, all geological features should be regarded as sensitive.

NOTATIONS AND TERMS/TERMINOLOGY

Absolute dating: Absolute dating provides specific dates or range of dates expressed in years.

Archaeological record: The archaeological record minimally includes all the material remains documented by archaeologists. More comprehensive definitions also include the record of culture history and everything written about the past by archaeologists.

Artefact: Entities whose characteristics result or partially result from human activity. The shape and other characteristics of the artefact are not altered by removal of the surroundings in which they are discovered. In the Southern African context examples of artefacts include potsherds, iron objects, stone tools, beads and hut remains.

Assemblage: A group of artefacts recurring together at a particular time and place, and representing the sum of human activities.

Context: An artefact's context usually consists of its immediate *matrix*, its *provenience* and its *association* with other artefacts. When found in *primary context*, the original artefact or structure was undisturbed by natural or human factors until excavation and if in *secondary context,* disturbance or displacement by later ecological action or human activities occurred.

Cultural Heritage Resource: The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

Cultural landscape: A cultural landscape refers to a distinctive geographic area with cultural significance.

Cultural Resource Management (CRM): A system of measures for safeguarding the archaeological heritage of a given area, generally applied within the framework of legislation designed to safeguard the past.

Feature: Non-portable artefacts, in other words artefacts that cannot be removed from their surroundings without destroying or altering their original form. Hearths, roads, and storage pits are examples of archaeological features

Impact: A description of the effect of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.

Lithic: Stone tools or waste from stone tool manufacturing found on archaeological sites.

Matrix: The material in which an artefact is situated (sediments such as sand, ashy soil, mud, water, etcetera). The matrix may be of natural origin or human-made.

Midden: Refuse that accumulates in a concentrated heap.
Microlith: A small stone tool, typically knapped of flint or chert, usually about three centimetres long or less.
Monolith: A geological feature such as a large rock, consisting of a single massive stone or rock, or a single piece of rock placed as, or within, a monument or site.

Phase 1 CRM Assessment: An Impact Assessment which identifies archaeological and heritage sites, assesses their significance and comments on the impact of a given development on the sites. Recommendations for site mitigation or conservation are also made during this phase.

Phase 2 CRM Study: In-depth studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required. Mitigation / Rescue involves planning the protection of significant sites or sampling through excavation or collection (in terms of a permit) at sites that may be lost as a result of a given development.

Phase 3 CRM Measure: A Heritage Site Management Plan (for heritage conservation), is required in rare cases where the site is so important that development will not be allowed and sometimes developers are encouraged to enhance the value of the sites retained on their properties with appropriate interpretive material or displays.

Provenience: Provenience is the three-dimensional (horizontal and vertical) position in which artefacts are found. Fundamental to ascertaining the provenience of an artefact is *association,* the co-occurrence of an artefact with other archaeological remains; and *superposition,* the principle whereby artefacts in lower levels of a matrix were deposited before the artefacts found in the layers above them, and are therefore older.

Random Sampling: A probabilistic sampling strategy whereby randomly selected sample blocks in an area are surveyed. These are fixed by drawing coordinates of the sample blocks from a table of random numbers.

Scoping Assessment: The process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an impact assessment. The main purpose is to focus the impact assessment on a manageable number of important questions on which decision making is expected to focus and to ensure that only key issues and reasonable alternatives are examined. The outcome of the scoping process is a Scoping Report that includes issues raised during the scoping process, appropriate responses and, where required, terms of reference for specialist involvement.

Site (Archaeological): A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity. These include surface sites, caves and rock shelters, larger open-air sites, sealed sites (deposits) and river deposits. Common functions of archaeological sites include living or habitation sites, kill sites, ceremonial sites, burial sites, trading, quarry, and art sites,

Stratigraphy: This principle examines and describes the observable layers of sediments and the arrangement of strata in deposits

Systematic Sampling: A probabilistic sampling strategy whereby a grid of sample blocks is set up over the survey area and each of these blocks is equally spaced and searched.

Trigger: A particular characteristic of either the receiving environment or the proposed project which indicates that there is likely to be an *issue* and/or potentially significant *impact* associated with that proposed development that may require specialist input. Legal requirements of existing and future legislation may also trigger the need for specialist involvement.

LIST OF ABBREVIATIONS

Abbreviation	Description
ASAPA	Association for South African Professional Archaeologists
AIA	Archaeological Impact Assessment
BP	Before Present
BCE	Before Common Era
BGG	Burial Grounds and Graves
CRM	Culture Resources Management
EIA	Early Iron Age (also Early Farmer Period)
EIA	Environmental Impact Assessment
EFP	Early Farmer Period (also Early Iron Age)
ESA	Earlier Stone Age
GIS	Geographic Information Systems
HIA	Heritage Impact Assessment
ICOMOS	International Council on Monuments and Sites
K2/Map	K2/Mapungubwe Period
LFP	Later Farmer Period (also Later Iron Age)
LIA	Later Iron Age (also Later Farmer Period)
LSA	Later Stone Age
MIA	Middle Iron Age (also Early later Farmer Period)
MRA	Mining Right Area
MSA	Middle Stone Age
NHRA	National Heritage Resources Act No.25 of 1999, Section 35
PFS	Pre-Feasibility Study
PHRA	Provincial Heritage Resources Authorities
SAFA	Society for Africanist Archaeologists
SAHRA	South African Heritage Resources Association
YCE	Years before Common Era (Present)

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1 BACKGROUND

1.1 Scope and Motivation

Exigo Sustainability (Pty) Ltd (Exigo) was commissioned by the St Francis Property Owners NPC and CES to conduct an Archaeological Impact Assessment (AIA) study for the proposed St Francis Bay Coastal Protection Project in the Eastern Cape Province. The rationale of the AIA was to determine the potential presence of heritage resources such as archaeological and historical sites and features, graves and places of religious and cultural significance in the project area; to consider the impact of the proposed project on such heritage resources, and to submit appropriate recommendations with regard to the cultural resources management measures that may be required at affected sites / features.

1.2 Project Direction

Exigo's expertise ensures that all projects be conducted to the highest international ethical and professional standards. As archaeological specialist for Exigo Sustainability, Mr Neels Kruger acted as field director for the project; responsible for the assimilation of all information, the compilation of the final consolidated AIA report and recommendations in terms of heritage resources on the demarcated project areas. Mr Kruger is an accredited archaeologist and Culture Resources Management (CRM) practitioner with the Association of South African Professional Archaeologists (ASAPA), a member of the Society for Africanist Archaeologists (SAFA) and the Pan African Archaeological Association (PAA) as well as a Master's Degree candidate in archaeology at the University of Pretoria.

1.3 Project Brief

The St Francis Bay beach has lost a considerable amount of sand material and the existing dune area across the frontage as a result of significant erosion events occurring over the past few decades. This has resulted in existing infrastructure becoming more vulnerable to loss and damage, should more significant erosion events take place. The effects of the erosion of the beach (in both width and depth of sediment) has been realised across the full frontage, stretching from the car park at the end of Nevil Rd in the south to the Kromme Estuary mouth in the north. Approximately 700 m of the frontage, referred to as "the spit" is particularly vulnerable, as it is currently unprotected and that should a breach occur, there would be significant risk to existing infrastructure (e.g. houses, roads and canals) which are located behind the spit. The St Francis Property Owners Non-Profit Company (SFPO NPC), on behalf of the Kouga Local Municipality, has proposed the implementation of a coastal protection scheme for St Francis Bay beach. The coastal protection scheme will include sand material sourcing from the Kromme River (and any other viable sources), beach nourishment of St Francis Bay beach and the development of coastal structures to retard the erosion of St Francis Bay beach. The implementation of beach nourishment together with the development of 5 short stub groynes (i.e. a low solid barrier built into the sea) was considered to be the most suitable option for long-term coastal protections. To prevent the sea from breaking through the St Francis Bay beach spit during a strong storm surge event, revetment structures have been proposed as an additional coastal protection measure to be implemented.

The revetment structures will extend for approximately 620m along the length of the beach spit. A stretch of coastal dunes and beach of approximately **2700m** extending from Nevil Rd to the Kromme River mouth forms the project area.

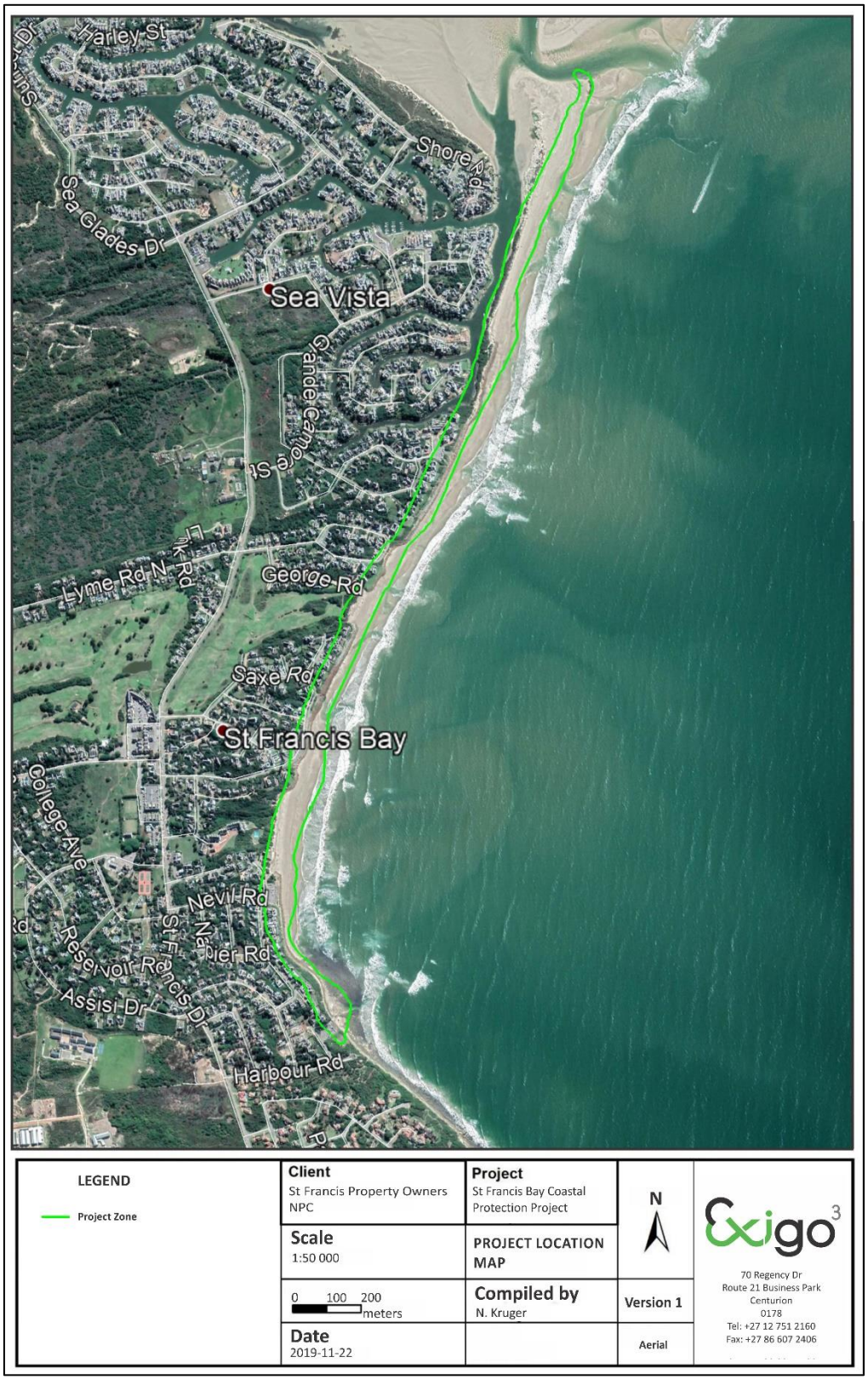

Figure 1-1: Aerial image indicating the proposed St Francis Bay Coastal Protection Project area.

1.4 Terms of Reference

Heritage specialist input into the Environmental Impact Assessment (EIA) process is essential to ensure that, through the management of change, developments still conserve our heritage resources. It is also a legal requirement for certain development categories which may have an impact on heritage resources. Thus, EIAs should always include an assessment of heritage resources. The heritage component of the EIA is provided for in the **National Environmental Management Act, (Act 107 of 1998)** and endorsed by section 38 of the **National Heritage Resources Act (NHRA - Act 25 of 1999)**. In addition, the NHRA protects all structures and features older than 60 years, archaeological sites and material and graves as well as burial sites. The objective of this legislation is to ensure that developers implement measures to limit the potentially negative effects that the development could have on heritage resources. Based hereon, this project functioned according to the following **terms of reference for** heritage specialist input**:**

- Provide a description of archaeological or historical sites and features, graves and places of religious and cultural value and the built environment;
- Provide a cultural context and provenience for archaeological artefacts, structures (including graves) and settlements in the project area and in the surrounding landscape by means of a detailed desktop background study and review of existing heritage information;
- Assess the nature and degree of significance of such resources within the area and establish possible heritage conservation buffers;
- Assess any possible developmental impacts, present and future, on potential archaeological and historical remains within the larger landscape;
- Propose and provide possible heritage management measures for following phases of legally compliant heritage mitigation and management.
- Liaise and consult with EC-PHRA with regards to the site investigation, recommendations pertaining to possible management and mitigation measures as well as the final decision (ROD) for the project heritage landscape.

1.5 CRM: Legislation, Conservation and Heritage Management

The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

1.5.1 Legislation regarding archaeology and heritage sites

The South African Heritage Resources Agency (SAHRA) and its provincial offices aim to conserve and control the management, research, alteration and destruction of cultural resources of South Africa. It is therefore vitally important to adhere to heritage resource legislation at all times.

a. National Heritage Resources Act No 25 of 1999, section 35

According to the National Heritage Resources Act No 25 of 1999 (section 35) the following features are protected as cultural heritage resources:

a. Archaeological artefacts, structures and sites older than 100 years

b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography

c. Objects of decorative and visual arts

d. Military objects, structures and sites older than 75 years

e. Historical objects, structures and sites older than 60 years

f. Proclaimed heritage sites

g. Grave yards and graves older than 60 years

h. Meteorites and fossils

i. Objects, structures and sites of scientific or technological value.

In addition, the national estate includes the following:

a. Places, buildings, structures and equipment of cultural significance

b. Places to which oral traditions are attached or which are associated with living heritage

c. Historical settlements and townscapes

d. Landscapes and features of cultural significance

e. Geological sites of scientific or cultural importance

f. Archaeological and paleontological sites

g. Graves and burial grounds

h. Sites of significance relating to the history of slavery

i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

With regards to activities and work on archaeological and heritage sites this Act states that:

"No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit by the relevant provincial heritage resources authority." (34. [1] 1999:58)

and

"No person may, without a permit issued by the responsible heritage resources authority-

(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;

(b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

(c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

(d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites. (35. [4] 1999:58)."

and

"No person may, without a permit issued by SAHRA or a provincial heritage resources agency-

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals (36. [3] 1999:60)."

b. Human Tissue Act of 1983 and Ordinance on the Removal of Graves and Dead Bodies of 1925

Graves and burial grounds are commonly divided into the following subsets:

a. ancestral graves
b. royal graves and graves of traditional leaders
c. graves of victims of conflict
d. graves designated by the Minister
e. historical graves and cemeteries
f. human remains

Graves 60 years or older are heritage resources and fall under the jurisdiction of both the National Heritage Resources Act and the Human Tissues Act of 1983. However, graves younger than 60 years are specifically protected by the Human Tissues Act (Act 65 of 1983) and Ordinance on Excavations (Ordinance no. 12 of 1980) as well as any local and regional provisions, laws and by-laws. Such burial places also fall under the jurisdiction of the National Department of Health and the Provincial Health Departments.

c. National Heritage Resources Act No 25 of 1999, section 35

This act (Act 107 of 1998) states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made. Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

1.5.2 Background to HIA and AIA Studies

South Africa's unique and non-renewable archaeological and palaeontological heritage sites are 'generally' protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. Heritage sites are frequently threatened by development projects and both the environmental and heritage legislation require impact assessments (HIAs & AIAs) that identify all heritage resources in areas to be developed. Particularly, these assessments are required to make recommendations for protection or mitigation of the impact of the sites. HIAs and AIAs should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources including archaeological and palaeontological sites that might occur in areas of developed and (b) make recommendations for protection or mitigation of the impact on the sites.

A detailed guideline of statutory terms and requirements is supplied in Addendum 1.

2 REGIONAL CONTEXT

2.1 Area Location

The proposed St Francis Bay Coastal Protection Project is located along the frontage of St Francis in the Kouga Municipality, Eastern Cape Province. Humansdorp is situated more or less 15km north of the project area and Port Elizabeth is 75km to the north-east. The project footprints appear on 1:50 000 map sheets **3424BB** (see Figure 2-1).

A key geographical point for the project locations is:

- **S34.159684° E24.834225°**

2.2 Area Description: Receiving Environment

The St Francis region is situated along the Eastern Cape coastal grasslands. The ecological landscape is defined as a combination of mixed grasslands and forest / scrub forest, typically dominated by mixed grassveld and forests at differing altitudes. The annual rainfall ranges between 1150 to over 1300mm per annum. The geology of the larger region is constituted by mudstones and sandstones of the Beaufort group and towards the coast, shales, mudstones and sandstones of the Ecca group, with exposures of dolerite intrusions mostly in the higher lying areas, are found. Soils in the area are moderate to deep and vary between sandy loams in the upper half to clayey loam in the downstream half. The town is situated within expanding rural residential areas and surface disturbances are prevalent in the study area. The Kromme Estuary mouth forms the northern periphery of the town.

2.3 Site Description

The project area subject to this assessment is situated along the frontage of the town of St Francis. The stretch of coastline subject to this assessment extends from the Kromme River to Harbour Road over an area consisting of both private properties and land belonging to the Kouga Municipality. At present, much of the coastline along the highwater mark is protected by extensive rock revetments. In places, these revetments as well as roads and sand embankments along the frontage have been eroded by recent storms and tidal activity. As such, very little of the original coastal dune environment remains in the project area and the only relatively intact coastline occurs towards the Kromme estuary.

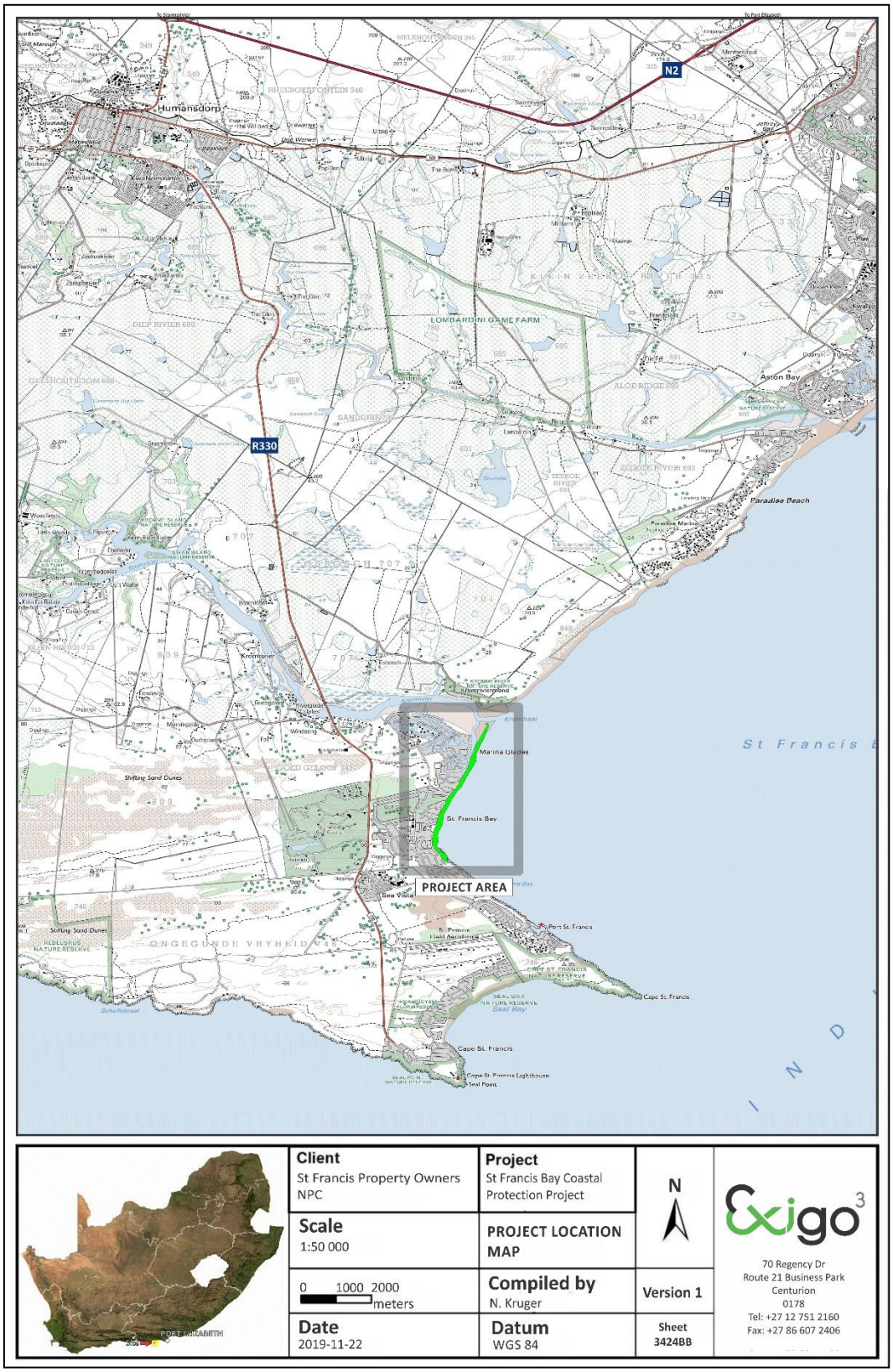

Figure 2-1: 1:50 00 Map representation of the location of the proposed St Francis Bay Coastal Protection Project (sheet 3424BB).

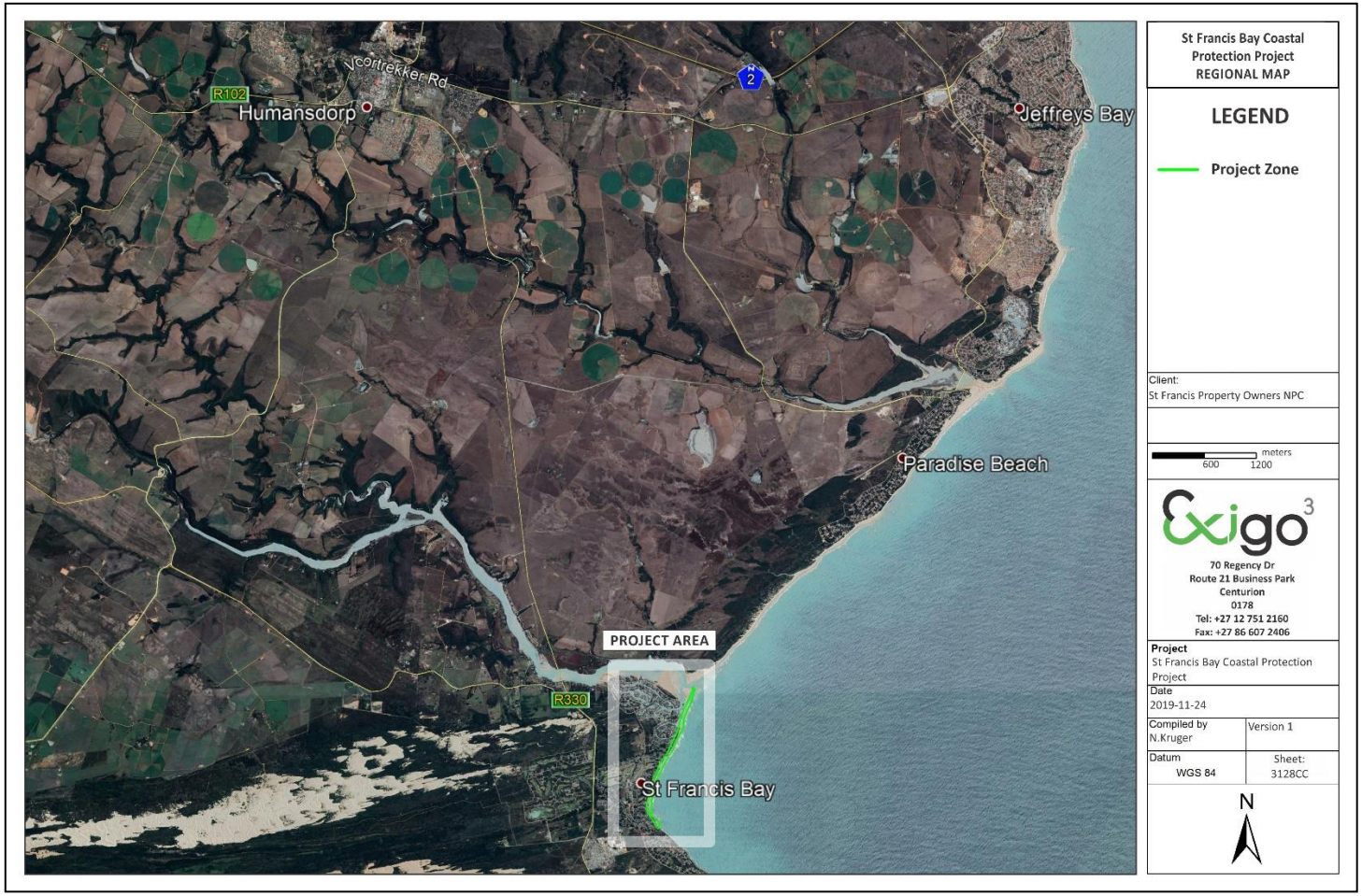

Figure 2-2: Aerial map providing a regional context for the proposed St Francis Bay Coastal Protection Project.

3 METHOD OF ENQUIRY

3.1 Sources of Information

Data from detailed desktop, aerial and field studies were employed in order to sample surface areas systematically and to ensure a high probability of heritage site recording.

3.1.1 Desktop Study

The larger landscape of Eastern Cape has been well documented in terms of its archaeology and history. A desktop study was prepared in order to contextualize the proposed project within a larger historical milieu. The study drew on available academic papers and research articles, unpublished archival databases to give a comprehensive representation of known sites in the larger project region and to establish a baseline of the landscape's heritage. A number of commercially driven Heritage Assessments have been conducted in the region around the project area and these include:

- Binneman, J.N.F. 1985. Research along the south eastern Cape coast. In: Hall, S.L. & Binneman, J.N.F. Guide to archaeological sites in the eastern and north eastern Cape. pp. 117-134. Grahamstown: Albany Museum.
- Binneman, J.N.F. 1996. The symbolic construction of communities during the Holocene Later Stone Age in the south-eastern Cape. Unpublished D.Phil. thesis: University of the Witwatersrand.
- Binneman, J.N.F. 2001. An introduction to a Later Stone Age coastal research project along the south-eastern Cape coast. Southern African Field Archaeology 10:75-87.
- Binneman, J.N.F. 2005. Archaeological research along the south-eastern Cape coast part1: open-air shell middens Southern African Field Archaeology 13 & 14:49-77.
- Binneman, J. 2005. Phase 1 archaeological and living heritage impact assessments on the farm Kabeljaus River 339, Jeffrey's Bay. Prepared for Africa Geo-Environmental Services (Pty) Ltd. Arcadia.
- Binneman, J. 2006. Phase 1 archaeological heritage impact assessment for the proposed Kouga development of portions of the farms Kabeljauws River No. 322 and Papiesfontein No. 319 in Jeffreys Bay, Kouga Municipality, District of Humansdorp, Eastern Cape. Prepared for CEN Integrated Environmental Management Unit, Port Elizabeth.
- Binneman, J.N.F. 2007. Archaeological research along the south-eastern Cape coast part2, caves and shelters: Kabeljous River Shelter 1 and associated stone tool industries Southern African Field Archaeology 15 & 16:57-74.
- Binneman, J. 2008. Phase 1 archaeological heritage impact assessment for the proposed "St Francis Coastal Reserve" on portions of the remainder of the farm New Papiesfontein No. 320, Kouga Municipality, District of Humansdorp, Eastern Cape. Prepared for: Envirovision Consulting, Pretoria.
- Binneman, J. 2009. A Phase 1: Archaeological Heritage Impact Assessment of the proposed Cob Creek Estate development on portion 21 of the Farm Kabeljauws River No. 321, Jeffreys Bay, Kouga Municipality, Eastern Cape.
- Binneman, J. 1996. The symbolic construction of communities during the Holocene Later Stone Age in the south-eastern Cape. Unpublished D.Phil. thesis: University of the Witwatersrand.
- Binneman, J. 2001. An introduction to a Later Stone Age coastal research project along the south-eastern Cape coast. Southern African Field Archaeology 10:75-87.
- Binneman, J. 2005. Archaeological research along the south-eastern Cape coast part1: open-air shell middens Southern African Field Archaeology 13 & 14:49-77.
- Binneman, J. 2007. Archaeological research along the south-eastern Cape coast part2, caves

and shelters: Kabeljous River Shelter 1 and associated stone tool industries Southern African Field Archaeology 15 & 16:57-74.
- Binneman, J. 2008. A Phase 1 Archaeological Impact Assessment (AIA) of the proposed development on Portion 78 of the Farm Ongegund. Vryheid No. 746 (Rocky Coast Farm), Cape St Francis, Kouga Municipality, Eastern Cape Province.
- Binneman, J. 2014. A Phase 1 Archaeological Impact Assessment (AIA) of the proposed storm water management system developments on Portion 62 of the farm Ongegunde Vryheid No. 746, St Francis Bay, Kouga Local Municipality, Eastern Cape Province.
- Deacon, H. J. & Wurz, S. 1996. Klasies River Main Site, Cave 2: a Howiesons Poort occurrence. In: Pwiti, G. & Soper, R., eds, Aspects of African Archaeology. Harare: University of Zimbabwe Publications, pp. 213–8.
- Nilssen, P. 2003. Phase 1 Archaeological Impact Assessment for the proposed St Francis Golf Estate, St Francis Bay, Kouga Municipality, Eastern Cape Province
- Webley, L. 2006. Phase 1: Archaeological Impact Assessment along the St Francis bay beach. Albany Museum

3.1.2 Aerial Survey

Aerial photography is often employed to locate and study archaeological sites, particularly where larger scale area surveys are performed. This method was applied to assist the foot site surveys where depressions, variation in vegetation, soil marks and landmarks were examined (refer to Section 5.1). Historical aerial photos obtained during the archival search were scrutinized and features that were regarded as important in terms of heritage value were identified and if they were located within the boundaries of the project area they were physically visited in an effort to determine whether they still exist and in order to assess their current condition and significance. By superimposing high frequency aerial photographs with images generated with Google Earth as well as historical aerial imagery, potential sensitive areas were subsequently identified, geo-referenced and transferred to a handheld GPS device. These areas served as reference points from where further vehicular and foot surveys were carried out (Section 5.2).

3.1.3 Mapping of sites

Historical and current maps of the project area were examined. By merging data obtained from the desktop study and the aerial survey, sites and areas of possible heritage potential were plotted on these maps of the larger St Francis area using GIS software. These maps were then superimposed on high definition aerial representations in order to graphically demonstrate the geographical locations and distribution of potentially sensitive landscapes. Historical and more recent maps indicate the appearance of suburban areas during the mid-1950's in the project area (refer to Section 5.1.)

3.1.4 Field Survey

Archaeological survey implies the systematic procedure of the identification of archaeological sites. An archaeological survey of the project alignments, routes and impact areas was conducted in November 2019. The process encompassed a systematic field survey in accordance with standard archaeological practice by which heritage resources are observed and documented. In order to sample surface areas systematically and to ensure a high probability of site recording, the beachfront was systematically surveyed on foot. GPS reference points identified during the aerial survey were also visited and random spot checks were made (see detail in previous section). Using a Garmin Montana GPS objects and structures of archaeological / heritage value were recorded and photographed with a Samsung Digital camera. Real time aerial orientation, by means of a mobile Google Earth application was also employed to investigate possible disturbed areas

during the survey.

3.1.5 Access

The project areas subject to this assessment are accessed via roads connecting to a number of parking areas and lookout points on the frontage. Access control is not applied to the areas relevant to this assessment and no restrictions were encountered during the site visit.

3.1.6 Visibility

The surrounding vegetation in the project area is mostly comprised out of coastal vegetational and pioneering species, scattered trees and bushes. The general visibility at the time of the AIA survey (November 2019) ranged from high in transformed areas, to low in more overgrown zones. In single cases during the survey sub-surface inspection was possible. Where applied, this revealed no archaeological deposits.

Figure 3-1: View of extensive rock revetments along the coast line.

Figure 3-2: View of residential houses and vegetated coastal dunes along rock revetments.

Figure 3-3: View of vegetated coastal dunes in the project area.

Figure 3-4: Erosion is evident along much of the remaining coastal dunes in the area.

Figure 3-5: View of stones and shells along coast dunes in the project area, these are probably not attributed to human activity.

Figure 3-6: View of the Kromme River estuary.

Figure 3-7: View of residential houses and vegetated coastal dunes along rock revetments.

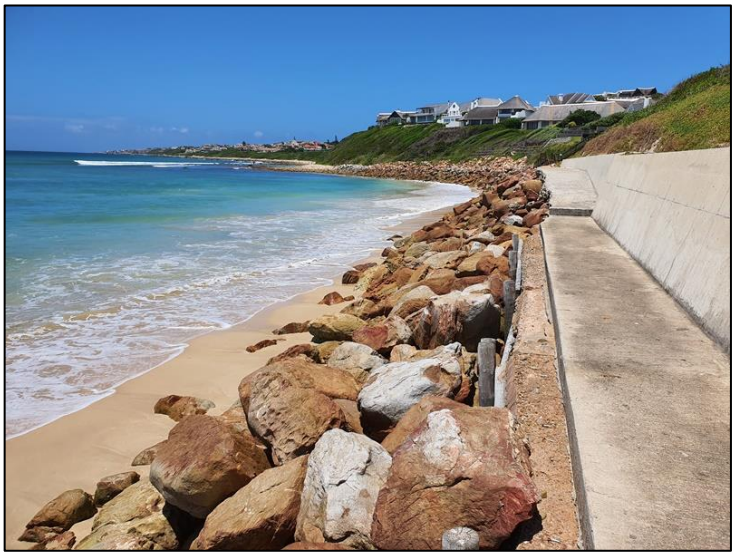

Figure 3-8: View farther rock revetments and concrete reinforcements along the St Francis beach frontage.

Figure 3-9: View of vegetated coastal dunes.

Figure 3-10: The project area, looking north across St Francis.

Figure 3-11: View of a small boat launch pad directly south of the project area.

Figure 3-12: The St Francis Community garden is situated south of the project area.

Figure 3-13: The Two Harbour Walk is situated south of the project area.

3.1.7 Summary: Limitations and Constraints

The foot site survey for the St Francis Bay Coastal Protection Project AIA primarily focused around the coastal dunes and other areas of potential heritage sensitivity. The following constraints were encountered:

- **Visibility:** Visibility proved to be a minor constraint in areas with denser surface cover, as well as portions where vegetation is more pristine.

It should be noted that, even though it might be assumed that survey findings are representative of the heritage landscape of the project area, it should be stated that the possibility exists that individual sites could be missed due to the localised nature of some heritage remains as well as the possible presence of sub-surface archaeology. Therefore, maintaining due cognisance of the integrity and accuracy of the archaeological survey, it should be stated that the heritage resources identified during the study do not necessarily represent all the heritage resources present in the project area. The subterranean nature of some archaeological sites, dense vegetation cover and visibility constraints sometimes distort heritage representations and any additional heritage resources located during consequent development phases must be reported to the Heritage Resources Authority or an archaeological specialist.

3.2 Impact Assessment

For consistency among specialists, impact assessment ratings by Exigo Specialist are generally done using the Plomp[1] impact assessment matrix scale supplied by Exigo. According to this matrix scale, each heritage receptor in the study area is given an impact assessment (See Section 6).

4 ARCHAEO-HISTORICAL CONTEXT

4.1 The archaeology of Southern Africa

Archaeology in Southern Africa is typically divided into two main fields of study, the **Stone Age** and the **Iron Age** or **Farmer Period**. The following table provides a concise outline of the chronological sequence of periods, events, cultural groups and material expressions in Southern African pre-history and history.

Table 1 Chronological Periods across Southern Africa

Period	Epoch	Associated cultural groups	Typical Material Expressions
Early Stone Age 2.5m – 250 000 YCE	Pleistocene	Early Hominins: *Australopithecines* *Homo habilis* *Homo erectus*	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First *Homo sapiens* species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	*Homo sapiens sapiens* including San people	Typically small to minute stone tools such as arrow heads, points and bladelets.
Early Iron Age / Early Farmer Period 300 – 900 AD **(commonly restricted to the interior and north-east coastal areas of Southern Africa)**	Holocene	First Bantu-speaking groups	Typically distinct ceramics, bead ware, iron objects, grinding stones.
Middle Iron Age (Mapungubwe / K2) / early Later Farmer Period 900 – 1350 AD **(commonly restricted to the interior and north-east coastal areas of Southern Africa)**	Holocene	Bantu-speaking groups, ancestors of present-day groups	Typically distinct ceramics, bead ware and iron / gold / copper objects, trade goods and grinding stones.
Late Iron Age / Later Farmer Period 1400 AD -1850 AD **(commonly restricted to the interior and north-east coastal areas of Southern Africa)**	Holocene	Various Bantu-speaking groups including Venda, Thonga, Sotho-Tswana and Zulu	Distinct ceramics, grinding stones, iron objects, trade objects, remains of iron smelting activities including iron smelting furnace, iron slag and residue as well as iron ore.
Historical / Colonial Period ±1850 AD – present	Holocene	Various Bantu-speaking groups as well as European farmers, settlers and explorers	Remains of historical structures e.g. homesteads, missionary schools etc. as well as, glass, porcelain, metal and ceramics.

4.2 Discussion: The St Francis Area: Specific Themes.

The history of Eastern Cape is reflected in a rich archaeological landscape. The province is well known for its contribution to Stone Age research and various South African archaeological cultures have derived their

[1] Plomp, H.,2004

names from cave sites in the larger Port Elizabeth landscape such as Klasies River, Albany, Wilton and Howiesons Poort. Significantly, the intensive utilization of marine resources by San hunter-gatherers (dating from as old as 6 000 years ago), Khoekhoe pastoralists and KhoiSan (dating from the past 1 800 years in the region), manifests in the archaeological record through hundreds of shell middens (large piles of marine shell) dating to the terminal Pleistocene and Holocene that litter coastal areas along the Eastern Cape and specifically St Francis Bay. As such, places like the Kabeljous River estuary and, specifically the Kabeljous River Shelters were popular areas for hunter-gatherers and pastoralists to live because of the wide variety of food resources within easy walking distance, i.e. shellfish along the beach, fish in the estuary and game in the nearby hills. Later, Bantu-speaking tribes moved into this area from other parts of Southern Africa and settled here. White farmers, settling in the area since the middle of the 19th century, divided up the landscape into a number of farms, which even today form the framework for agricultural, residential and other forms of development. Binneman (2009) indicates that the coastline south of Port Elizabeth once housed large numbers of archaeological sites including the remains of indigenous people. Unfortunately, many of these important archaeological features have been destroyed by the development of the coastal towns and many were covered with dune sand and vegetation.

4.2.1 Early History and the Stone Ages

The Earlier Stone Age, from between 1.5 million and 250 000 years ago, refers to the earliest that *Homo sapiens sapiens'* predecessors began making stone tools. The earliest stone tool industry was referred to as the Olduwan Industry, originating from stone artefacts recorded at Olduvai Gorge, Tanzania. The Acheulian Industry, the predominant Southern African Early Stone Age Industry, which replaced the Olduwan Industry approximately 1.5 million years ago, is attested to in diverse environments and over wide geographical areas. The hallmark of the Acheulian Industry is its large cutting tools (LCTs or bifaces), primarily handaxes and cleavers. The most well-known Early Stone Age site in Southern Africa is Amanzi Springs, situated about 10km north-east of Uitenhage, near Port Elizabeth (Deacon 1970). In a series of spring deposits, a large number of stone tools were found in situ to a depth of 3-4m. Wood and seed material preserved remarkably very well within the spring deposits, and possibly date to between 800 000 to 250 000 years old. Large stone ESA tools are often found associated with gravels which capped the hill slopes in the region, and on the calcrete floors exposed in the dune systems along the coast towards Cape St Francis (Laidler 1947; Deacon & Geleijnse 1988; Binneman 2001, 2005).

The Middle Stone Age (MSA) spans a period from 250 000-30 000 years ago and focuses on the emergence of modern humans through the change in technology, behaviour, physical appearance, art and symbolism. The large handaxes and cleavers were replaced by smaller stone artefacts called the MSA flake and blade industries. Surface scatters of these flake and blade industries occur widespread across Southern Africa. The majority of MSA sites occur on flood plains and sometimes in caves and rock shelters. Sites usually consist of large concentrations of knapped stone flakes such as scrapers, points and blades and associated manufacturing debris. Some of the world's oldest remains of anatomically modern humans (some 110 000 years old) come from the Klasies River complex of caves about 35 kilometers west of St Francis Bay. The archaeological deposits at these caves date to 120 000 years old and also represent the oldest evidence for the exploitation of marine food resources by people in the region (Singer & Wymer 1982; Rightmire & Deacon 1991; Deacon 1992, 1993, 2001; Deacon, H. J & Shuurman, R. 1992). Although humans were already anatomically modern by 110 000 years ago, they were not yet exhibiting 'modern behaviour' and only developed into culturally modern behaving humans between 80 000 and 70 000 years ago. This occurred during cultural phases known as the Still Bay and Howieson's Poort time periods/stone tool traditions. The Howison's Poort is well represented at Klasies River Cave 2 and in the dunes near Oyster Bay (Deacon & Wurz 1996; Wurz 1999; Carrion et al. 2000).

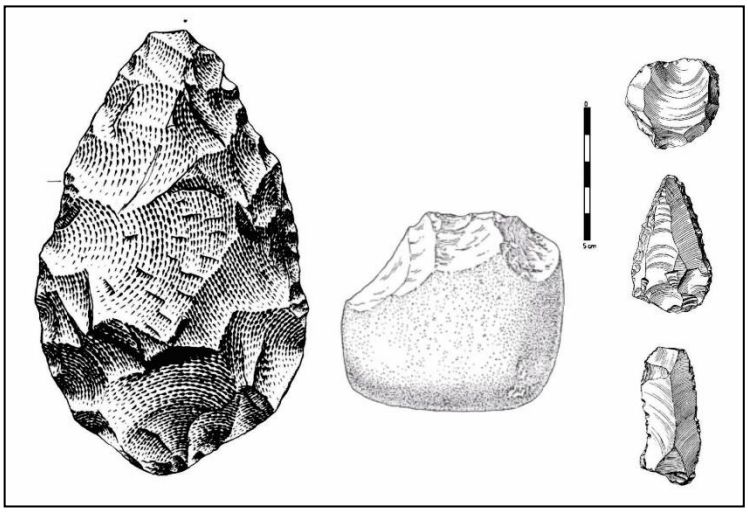

Figure 4-1: Typical ESA handaxe (left) and cleaver (center). To the right is a MSA scraper (right, top), point (right, middle) and blade (right, bottom).

The Later Stone Age (LSA) spans the period from about 20 000 years ago until the colonial era, although some communities continue making stone tools today. The period between 30 000 and 20 000 years ago is referred to as the transition from the MSA to LSA; although there is a lack of crucial sites and evidence that represent this change. The LSA is marked by a series of technological innovations, new tools and artefacts, the development of economic, political and social systems, and core symbolic beliefs and rituals. The stone toolkits changed over time according to time-specific needs and raw material availability, from smaller microlithic Robberg, Wilton Industries and in between, the larger Albany/Oakhurst and the Kabeljous Industries. Bored stones used as part of digging sticks, grooved stones for sharpening and grinding and stone tools fixed to handles with mastic also become more common. Fishing equipment such as hooks, gorges and sinkers also appear within archaeological excavations. Most importantly bows and arrows revolutionized the hunting economy. It was only within the last 2000 years that earthenware pottery was introduced. Before then tortoiseshell bowls were used for cooking and ostrich eggshell (OES) flasks were used for storing water. Sites dating to the LSA are better preserved in rock shelters, although open sites with scatters of mainly stone tools can occur. Well-protected deposits in shelters allow for stable conditions that result in the preservation of organic materials such as wood, bone, hearths, ostrich eggshell beads and even bedding material.

4.2.2 Pastoralism in the Eastern Cape

Khoekhoe pastoralists or herders entered southern Africa about 2000 years ago, with domestic animals such as fat-tailed sheep and goats, travelling through the south towards the coast. Hunter-gatherer and herder sites occur widely in the Eastern Cape. It is sometimes difficult to distinguish between hunter-gatherer and herder sites, because the former may have acquired stock through theft or herder clientship and the latter largely relied on hunting and gathering to supplement pastoral resources. Both groups collected shellfish and used other food sources from the sea, and both groups hunted and gathered plant food. Their economic systems were directed by the accumulation of wealth in domestic stock numbers and their political make-up was more hierarchical than that of the hunter-gatherers. Often, these archaeological sites are found close to the banks of large streams and rivers. Excavations at sites indicate that shellfish and marine animals, and in particular seals, specifically formed a major part of their diet. The intensive utilization of shellfish manifests in the archaeological record through hundreds of shell middens (large piles of marine shell) dating to the terminal Pleistocene and Holocene that litter the coastal areas of southern Africa. These were campsites of San,

Khoekhoe and Bantu-speakers who lived along the immediate coast. Human remains are frequently found in the middens, mixed with shell, other food remains and cultural material.

Similarly, the most common archaeological sites found in the St Francis Bay area are shell middens (Binneman 1996, 2001, 2005; Rudner 1968). They are relatively large piles of marine shell and are popularly referred to as 'strandloper middens'. In general, these shell middens date from the past 6 000 years. They are found mainly opposite rocky coasts, but also occur along sandy beaches if there was a large enough source of white mussels. These concentrations of shell represent the campsites of San hunter-gatherers (dating from as much as 6 000 years ago), Khoekhoe pastoralists and KhoiSan (dating from the past 1 800 years in the region) peoples who lived along the immediate coast and collected marine foods on a daily basis. The Khoekhoe people were the first food producers in South Africa and introduced domesticated animals (sheep, goat and cattle) and ceramic vessels to southern Africa as early as 2 000 years ago. The oldest sheep remains recovered from the middens near the Kabeljous River Mouth were radiocarbon dated to 1 560 years old - the oldest date for the presence of sheep in the Eastern Cape (Binneman 1996, 2001) (see further detail in Section 5.1).

Figure 4-2: A large shell midden off the coast of southern Africa

Furthermore, the Cape St Francis region contains remnants of ancient landscapes with associated fossilized remains of animals that died around waterholes. Such remains are important to inform scientists about ancient and altered environments and ecosystems.

4.2.3 Iron Age / Farmer Period

The beginnings of the Iron Age (Farmer Period) in southern Africa are associated with the arrival of a new Bantu speaking population group at around the third century AD. These newcomers introduced a new way of life into areas that were occupied by Later Stone Age hunter-gatherers and Khoekhoe herders. Distinctive features of the Iron Age are a settled village life, food production (agriculture and animal husbandry), metallurgy (the mining, smelting and working of iron, copper and gold) and the manufacture of pottery. Iron Age farming communities generally preferred to occupy river valleys within the eastern half of southern Africa owing to the summer-rainfall climate that was conducive for growing millet and sorghum.Even though much research has been conducted on the Iron Age (IA) across southern Africa, only a small portion has focused on the Eastern Cape. A few important Eastern Cape Early Iron Age Sites (EIA) sites include Kulubele situated in the Kei River Valley near Khomga (Binneman 1996), Ntsitsana situated in the interior Transkei, 70 km west of the coast, along the Mzimvubu River (Prins & Granger 1993), and Canasta Place situated on the west bank of the Buffalo River (Nogwaza 1994). Previous investigations into the EIA in the Transkei and Ciskei

include work at Buffalo River Mouth (Wells 1934; Laidler 1935), at Chalumna River Mouth (Derricourt 1977) and additional research by Feely (1987) and Prins (1989).

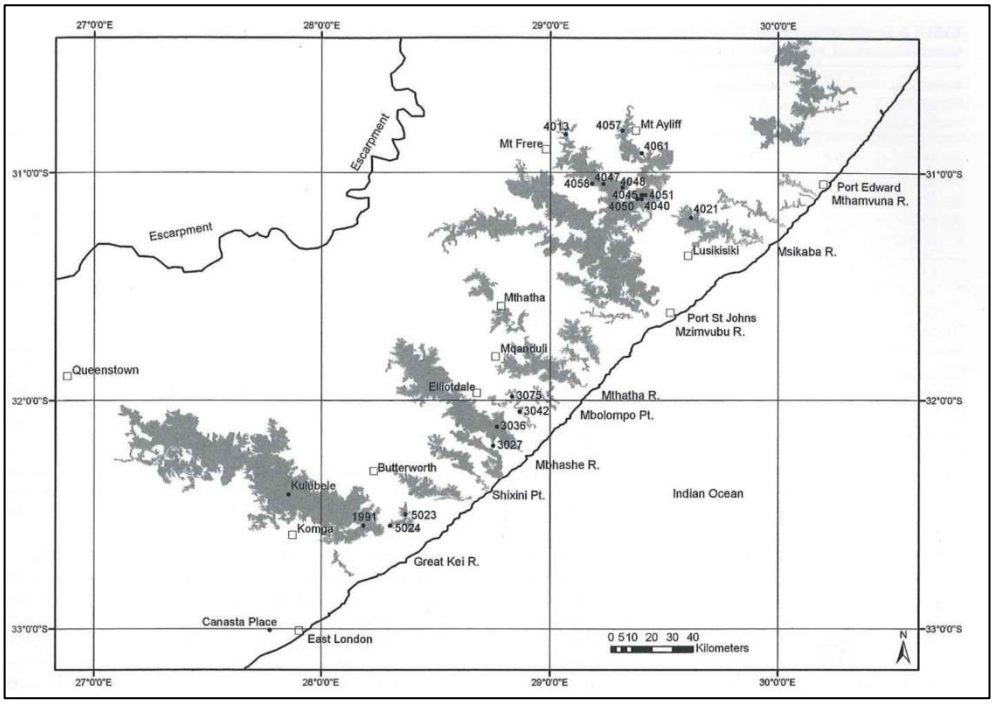

Figure 4-3: Early Iron Age farmer period sites in the Eastern Cape around Mthahta (after Feely & Bell-Cross 2011).

The first EIA farming communities during the first millennium AD preferred to occupy river valleys within the eastern half of southern Africa owing to the summer-rainfall climate that was conducive for growing millet and sorghum. The closest documented and well-researched Early Iron Age site, to Elliot is located within the Great Kei River Valley. The site is situated some 200 m below the plateau and 60 km inland from the coast, within the borders of the Transkei, approximately 100 km up the coast towards Durban. There has in the past been some speculation that Early Iron Age populations may have spread well south of the Transkei into the Ciskei, possibly up to the Great Fish River (Binneman et al. 1992), however, no further research has been undertaken to confirm these statements. A closer Early Iron Age site has been documented to the south of East London (Cronin 1982). Thicker and decorated pottery sherds, kraals, possible remains of domesticated animals, upper and lower grindstones and storage pits are associated for identifying EIA sites. The sites are generally large settlements, but the archaeological visibility may in most cases be difficult owing to the organic nature of the homesteads. Metal and iron implements are also associated with EIA communities.

The Later Iron Age (LIA) is not only distinguished from the EIA by greater regional diversity of pottery styles but is also marked by extensive stone wall settlements. LIA sites in the Eastern Cape Province occur adjacent to the major rivers in low lying river valleys but also along ridge crests above the 800m contour. The LIA in the project area can be ascribed to the Mpondomise, Thembu, and Xhosa tribal clusters or their immediate predecessors (Feely 1987). It is also possible that some stone walled sites, especially those incorporating shelters or caves, were constructed by hybrid San/Nguni groups. Trade played a major role in the economy of LIA societies. Goods were traded locally and over long distances. The main trade goods included metal, salt, grain, cattle and thatch. This led to the establishment of economically driven centres and the growth of trade wealth. Keeping of domestic animals, metal work and the cultivation of crops continued with a change in the organisation of economic activities (Maggs, 1989; Huffman 2007). Hilltop settlements are mainly

associated with LIA settlement patterns that occurred during the second millennium AD. Later Iron Age settlements have been formally recorded by the Albany Museum and cover a relatively extended area in comparison with the Early Iron Age settlement patterns. With the exception of the Tembu, stone buildings which characterizes the Iron Age sites of Sotho areas, is absent in the Transkei and Ciskei, and a pattern of some mobility without, it is presumed, a stone working technology of significance, makes the allocation of sites a major problem (Derricourt 1973).

Contact with the Cape Colony initially stimulated an already flexible and dynamic characteristic of the Cape Nguni political economy. When trade opportunities developed in the late 18th century, the Xhosa would exchange cattle (and permission for and guidance in hunting elephants) in return for copper, iron, beads (Peires 1981:95); they would then exchange these goods at a profit for cattle with their African neighbours to the east, bringing about a kind of speculation in cattle.

4.2.4 Later History: Colonial Period

The Eastern Cape region is typically viewed by historians as a frontier zone. This area was the meeting place between an aggressively expanding colonial frontier and the southernmost distribution of black Bantu-speaking farming communities in Africa (Huffman 2007). It is well known in the historical literature for the nine frontier wars that were fought here between the settlers of the Cape colony and the Xhosa nation between 1779 and 1879 (see below). Whereas white colonial settlement expanded north and eastwards from Table Bay, in modern Cape Town, some 350 years ago Bantu-speaking agro pastoralists, the predecessors of the Xhosa nation, inhabited areas to the east of the Sundays river already since 1300 years ago (Binneman et al 1992). For many centuries their movement further west and south were hindered by a climatic frontier that prevented these small-scale subsistence farmers from cultivating summer-rainfall crops, such as millet and sorghum, their main source of food. Adding to climatic constraints, the first Bantu speaking pioneers encountered other indigenous population groups in these more marginal areas as did colonial agents many centuries later. These were the Khoisan - the direct descendants of the first modern people to have emerged in Africa some 200 000 years ago. These people had from the time of van Riebeeck become popularly known as the San or Bushmen and Khoekhoe or Hottentots. Whereas the Khoekhoe typically lived closer to the coastal areas where they could find adequate grazing for their cattle and sheep the San hunter-gatherers lived further inland in areas not favoured by either Khoekhoe pastoralists or Bantu-speaking agropastoralists. Nevertheless, the Eastern Cape became the contact zone between these different cultures both in the historical and prehistoric past.

By the closing decades of the 18th century, South Africa had fallen into two broad regions: west and east. Colonial settlement dominated the west, including the winter rainfall region around the Cape of Good Hope, the coastal hinterland northward toward the present-day border with Namibia, and the dry lands of the interior. Trekboers moved into, and occupied Khoekhoe and remnant hunter-gatherer land. Indigenous farmers controlled both the coastal and valley lowlands and the Highveld of the interior in the east, where summer rainfall and good grazing made mixed farming economies possible A large group of British settlers arrived in the eastern Cape in 1820; this, together with a high European birth rate and wasteful land usage, produced an acute land shortage, which was alleviated only when the British acquired more land through massive military intervention against Africans on the eastern frontier. Until the 1840s the British vision of the colony did not include African citizens and most of these groups were expelled across the Great Fish River, the unilaterally proclaimed eastern border of the colony. The first step in this process included attacks in 1811–12 by the British army on the Xhosa groups, the Gqunukhwebe and Ndlambe. An attack by the Rharhabe-Xhosa on Graham's Town in 1819 provided the pretext for the annexation of more African territory, to the Keiskamma River. Various Rharhabe-Xhosa groups were driven from their lands throughout

the early 1830s. They counterattacked in December 1834, and Governor Benjamin D'Urban ordered a major invasion the following year, during which thousands of Rharhabe-Xhosa died. The British crossed the Great Kei River and ravaged territory of the Gcaleka-Xhosa as well; the Gcaleka chief, Hintsa, invited to hold discussions with British military officials, was held hostage and died trying to escape. The British colonial secretary, Lord Glenelg, who disapproved of D'Urban's policy, halted the seizure of all African land east of the Great Kei. D'Urban's initial attempt to rule conquered Africans with European magistrates and soldiers was overturned by Glenelg; instead, for a time, Africans east of the Keiskamma retained their autonomy and dealt with the colony through diplomatic agents However, after further fighting with the Rharhabe-Xhosa on the eastern frontier in 1846, Governor Colonel Harry Smith finally annexed, over the next two years, not only the region between the Great Fish and the Great Kei rivers (establishing British Kaffraria) but also a large area between the Orange and Vaal rivers, thus establishing the Orange River Sovereignty. These moves provoked further warfare in 1851–53 with the Xhosa (joined once more by many Khoe), with a few British politicians ineffectively trying to influence events. Between 1811 and 1858 colonial aggression deprived Africans of most of their land between the Sundays and Great Kei rivers and produced poverty and despair. From the mid-1850s British magistrates held political power in British Kaffraria, destroying the power of the Xhosa chiefs. Following a severe lung sickness epidemic among their cattle in 1854–56 the Xhosa killed many of their remaining cattle and in 1857–58 grew few crops in response to a millenarian prophecy that this would cause their ancestors to rise from the dead and destroy the whites. Many thousands of Xhosa starved to death, and large numbers of survivors were driven into the Cape Colony to work. British Kaffraria fused with the Cape Colony in 1865, and thousands of Africans newly defined as Fingo resettled east of the Great Kei, thereby creating Fingoland.

4.2.5 Later History: St Francis Bay

Manuel de Perestrelo, a Portuguese explorer weighed anchor in a sheltered bay in 1575. He was struck with the natural beauty of what he saw and named it Bahia de Sao Francisca after the Patron Saint of Sailors, St Francis of Assissi. As legend has it, the landward side reminded him of the beautiful cloisters of the 14th Century Gothic monastery of St Francisca, at his hometown of Santareme. Little did he know that over 400 years later a unique village of great beauty would develop right here. In 1954 a new adventurer, Leighton Hulett, paid £1 750 for the farm Goedgeloof and moved here from KwaZulu Natal with his young family. The land was harsh and not suitable for farming so in 1958, to supplement their income, he established a rough fishing camp for visitors. As time passed several more people, mainly from Port Elizabeth and Uitenhage, bought land from Hulett and built holiday homes. After he exchanged a house and plot in the village for a further 179 hectares of swampy land alongside the Kromme River, he dredged a canal system, making St Francis the first marina in Southern Africa. He insisted on rigid control of building designs, allowing only homes with white walls and high-pitched black thatch roofs. In 1976, when the Humansdorp Divisional Council became the controlling authority, they entrenched these controls in the local bylaws. The building codes of Santareme stipulate red tiled roofs, creating a unique Mediterranean theme. Port St Francis is the only privately-owned working harbour in South Africa and home to a squid, hake and pilchard fleet. Construction was finished in 1997, when Port Island was inaugurated into South Africa as newly proclaimed land (soil from the basin of the new harbour was used to create this piece of land). Private yachts and deep-sea fishing boats have access to the ocean from the recreational bay (http://www.stfrancistourism.co.za/area/st-francis-bay).

5 RESULTS: ARCHAEOLOGICAL SURVEY

5.1 The Off-Site Desktop Survey

The history and archaeology of the larger Eastern Cape Province and its coastal areas have seen a number of systematic archaeological research projects indicating the occurrence of Herder coastal sites, shell middens and also Colonial remnants. The archaeology of the Cape St Francis area in particular was studied by Dr J Binneman (Albany Museum) during the 1980s and detailed information is available in his PhD dissertation (Binneman 1996). According to Binneman, coastal shell middens are divided into three groups that are most common in the St Francis area:

1. Shell middens without pottery and with large quartzite implements, are classified as the Kabeljous Industry (first identified at a site on the Kabeljous River near Jeffreys Bay). This industry dates to between 3000 and 1800 years before present (BP).
2. A second group of shell middens, also without pottery, but with microlithic tools, is called the Wilton Industry. These date to between 5180 and 1900 BP.
3. Binneman excavated an open-air shell-midden in a deflation hollow in the Sand River Dune Fields that was named Goedgeloof (after the adjoining farm) (refer to Figure 5-3 and Figure 5-4). This pastoralist site represents the oldest dates for sheep and pottery in the Eastern Cape. The pottery has been dated to 1770 BP (AD 180) and the sheep to 1560 BP (AD 390). Interestingly, the most common shellfish utilized by these peoples was pencil bait (*Solen capensis*) and these were almost certainly collected from the Kromme River estuary which has the highest population of pencil bait in the Eastern Cape. The site of Goedgeloof is located some 5km from the St Francis Bay coast showing that the occupants of the site were traveling considerable distances to collect their food. In addition to middens, a number of graves were found in the Sand River Dune Field area adjacent to the proposed site for the St Frances Golf Estate. The burials generally represent Khoisan individuals who are frequently buried in a flexed (fetal) position. They may be buried with grave goods such as grindstones or ostrich eggshell bead necklaces. Of importance is the discovery of the remains of a Negroid individual just north of the Kromme River some years ago. This individual was buried some 700 years ago and this is the earliest Negroid found this far south on the South African coast.

Historical aerial imagery of this particular region is limited but archive maps of areas subject to this assessment indicate a landscape which has been transformed over the past decades by human activity relating urbanization and human settlement. A careful analysis of historical sources, historical aerial imagery and archive maps reveals the following:

- An HIA conducted in in 2006[2] for initial rehabilitation plans on the St Francis Bay beach, indicated that the larger St Francis Bay coast is rich in notably marine archaeological resources.
- Areas subject to this assessment have been altered extensively by recent and historical urbanization, presumably during the latter part of the 20th century.
- Man-made structures or Built Environment features occur along the frontage in the project area by at least 1970.

[2] **Webley, L. 2006. PHASE 1: ARCHAEOLOGICAL IMPACT ASSESSMENT ALONG THE ST FRANCIS BAY BEACH. Albany Museum**

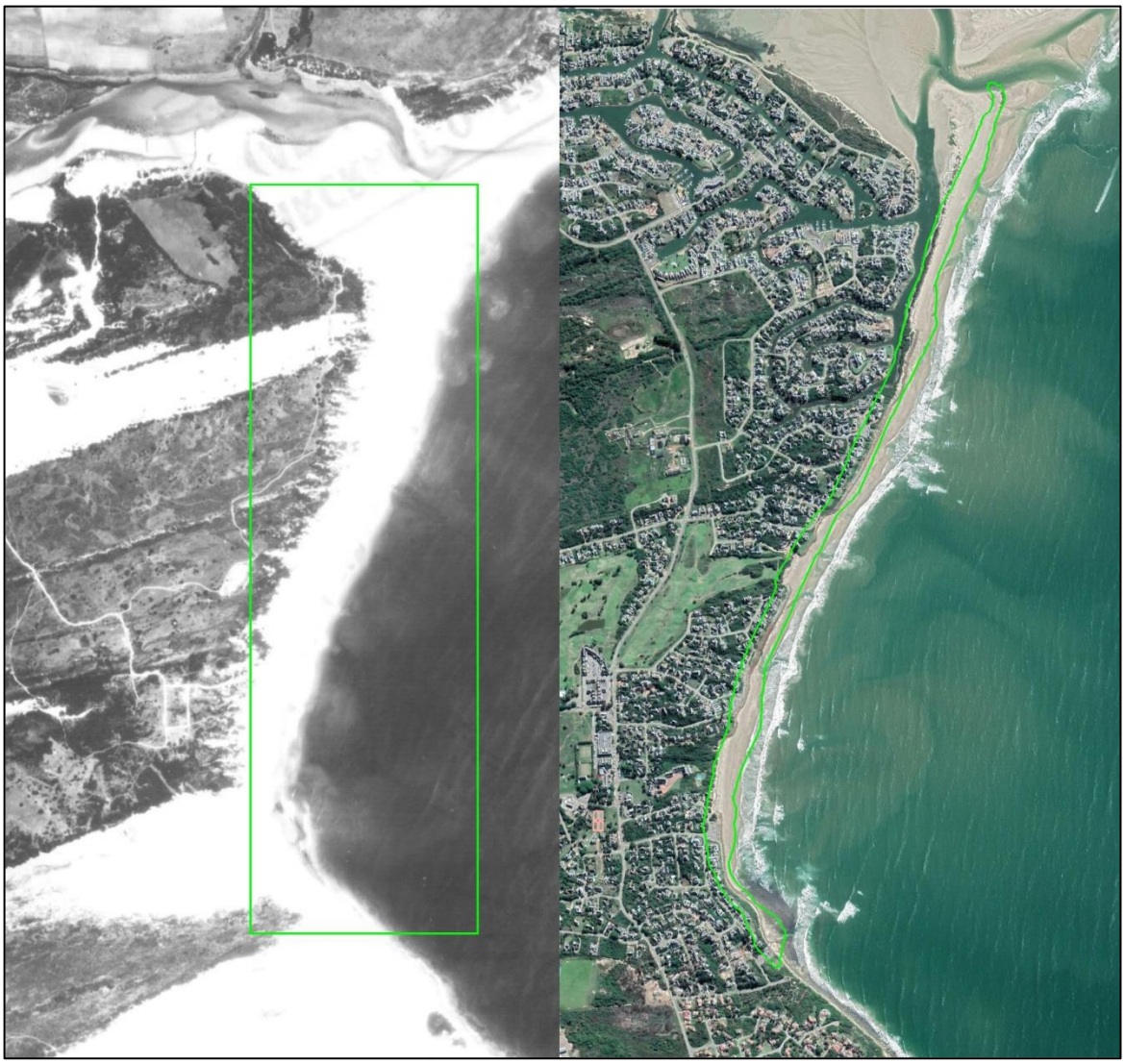

Figure 5-1: A historical aerial image dating to 1951 indicating the project area (green line) in the historical landscape. The current status quo of the landscape is indicated on the right.

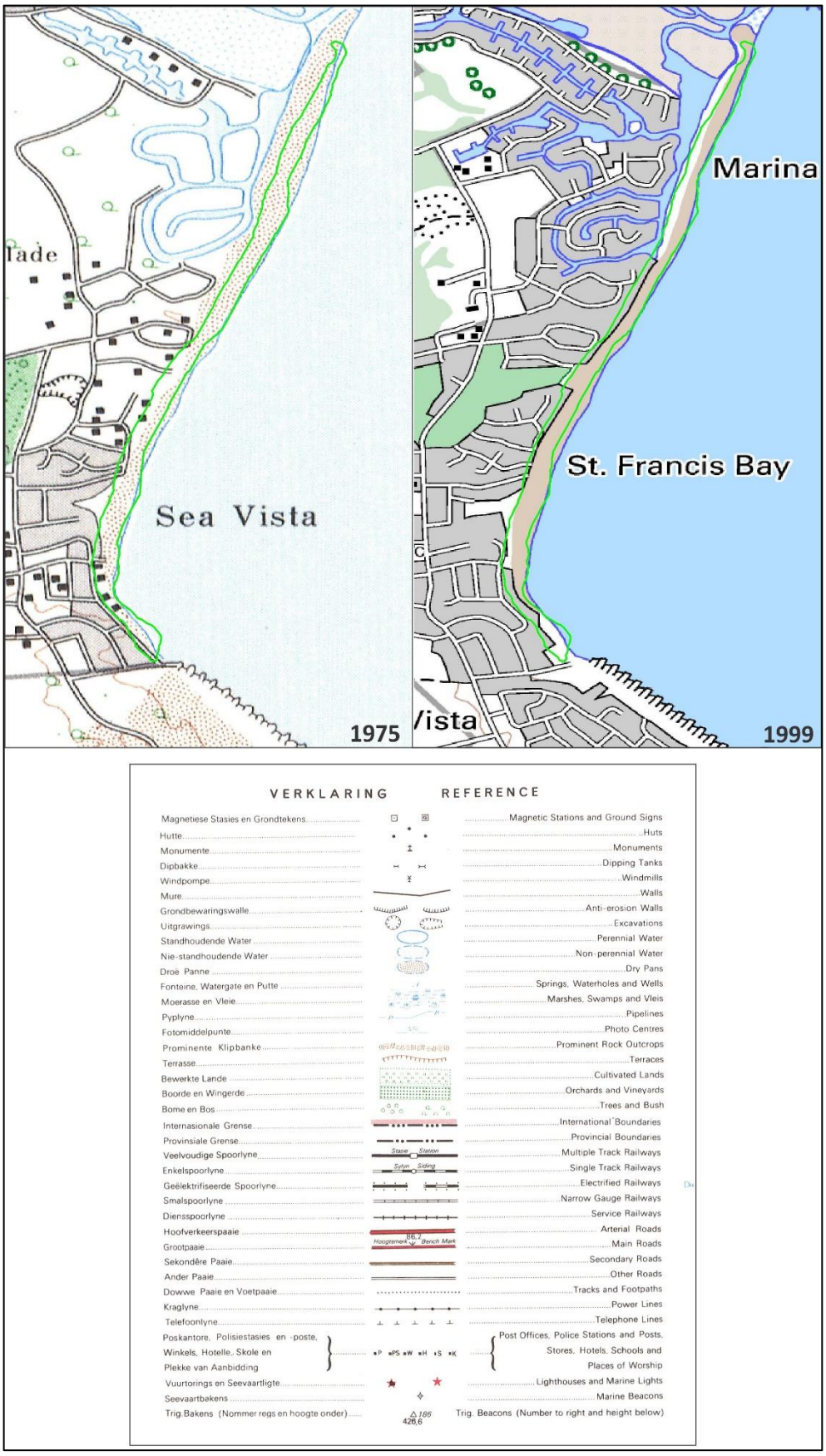

Figure 5-2: Historical topographic maps of the project area dating to 1975 (left) and 1998 (right).

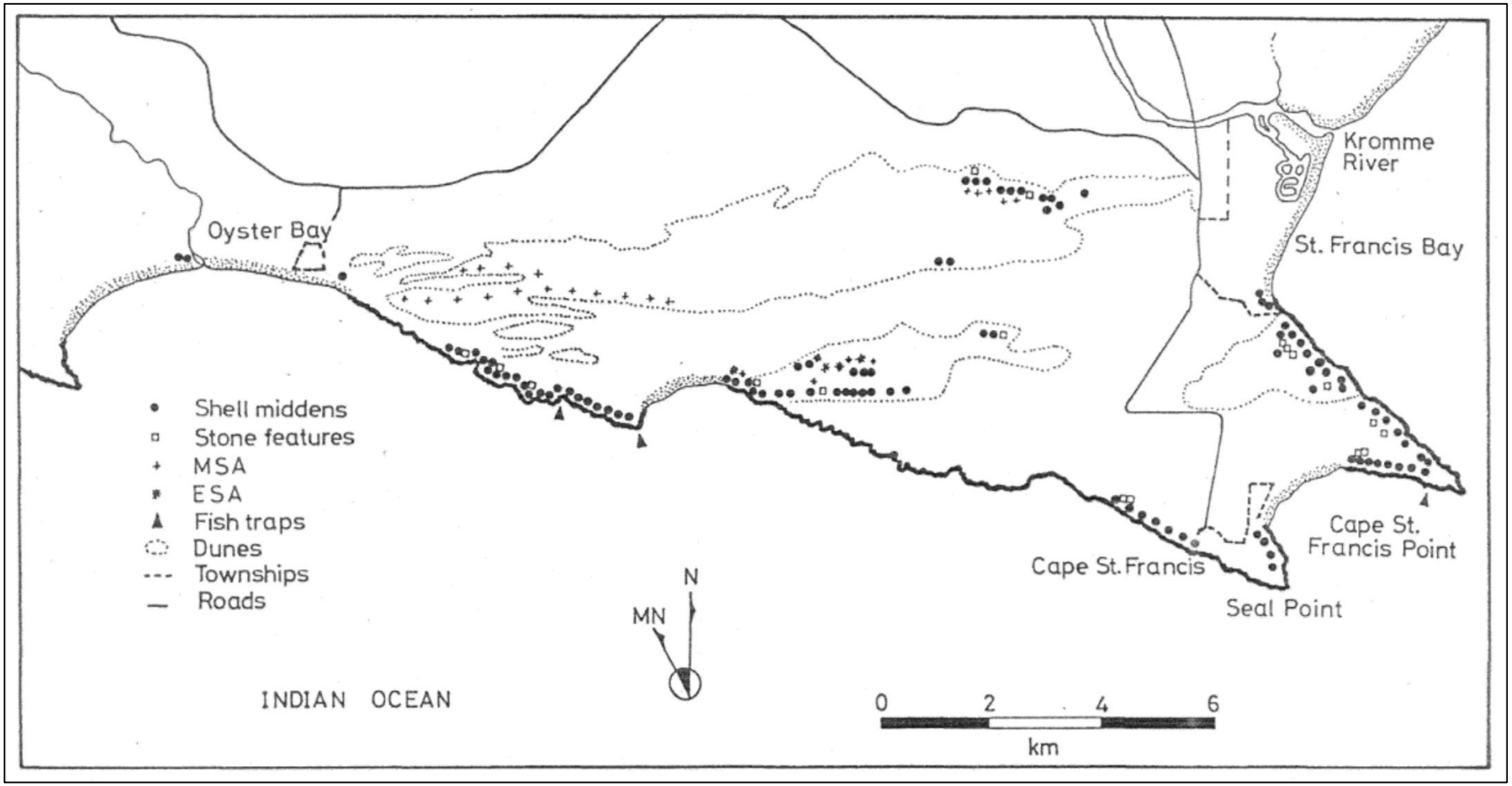

Figure 5-3: Map indicating the distribution of archaeological sites Cape Sit Francis Coast (Binneman 1986 in Webley 2006)

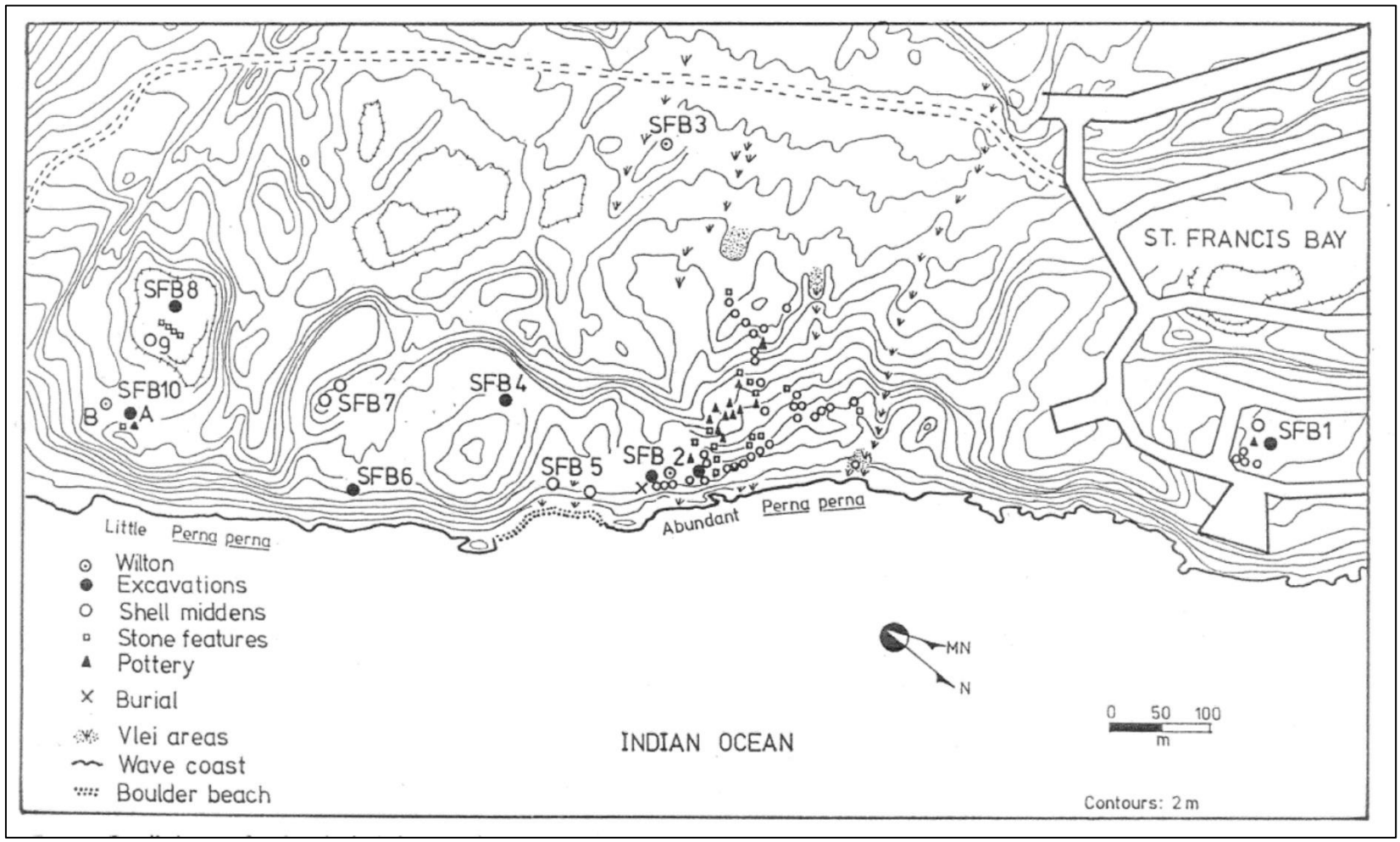

Figure 5-4: Detail map indicating the distribution of archaeological sites and features along the Cape St Francis dune fields (Binneman 1986 in Webley 2006)

5.2 The Archaeological Site Survey

The archeological site survey did not locate any archaeological sites or material in the project area of the St Francis Bay Coastal Protection Project area. As such, no shell concentrations, stone, bone or pottery fragments were observed and it is highly likely that heritage sites may have been lost due to coastal erosion, through coastal development or during previous ocean front rehabilitation projects where by extensive revetments were constructed in recent years.

It should be noted that the "Community Garden" and the "Two Harbour Walk" situated to the south of the project area near Harbour Road could hold social meaning and significance to local residents, an aspect which should be interrogated during the Public Participation process.

6 RESULTS: STATEMENT OF SIGNIFICANCE AND IMPACT RATING

6.1 Potential Impacts and Significance Ratings[3]

The following section provides a background to the identification and assessment of possible impacts and alternatives, as well as a range of risk situations and scenarios commonly associated with heritage resources management. A guideline for the rating of impacts and recommendation of management actions for areas of heritage potential within the study area is supplied in Section 10.2 of Addendum 1.

6.1.1 General assessment of impacts on resources

Generally, the value and significance of archaeological and other heritage sites might be impacted on by any activity that would result immediately or in the future in the destruction, damage, excavation, alteration, removal or collection from its original position, of any archaeological material or object (as indicated in the National Heritage Resources Act (No 25 of 1999)). Thus, the destructive impacts that are possible in terms of heritage resources would tend to be direct, once-off events occurring during the initial construction period. However, in the long run, the proximity of operations in any given area could result in secondary indirect impacts. The EIA process therefore specifies impact assessment criteria which can be utilised from the perspective of a heritage specialist study which elucidates the overall extent of impacts.

6.1.2 Direct impact rating

Direct or primary effects on heritage resources occur at the same time and in the same space as the activity, e.g. loss of historical fabric through demolition work. **Indirect effects or secondary effects** on heritage resources occur later in time or at a different place from the causal activity, or as a result of a complex pathway, e.g. restriction of access to a heritage resource resulting in the gradual erosion of its significance, which is dependent on ritual patterns of access (refer to Section 11.3 in the Addendum for an outline of the relationship between the significance of a heritage context, the intensity of development and the significance of heritage impacts to be expected). The significances of the impacts were determined through a synthesis of the criteria below:

As no heritage receptors were found in the project zone, no impact to heritage resources is foreseen.

[3] Based on: W inter, S. & Baumann, N. 2005. *Guideline for involving heritage specialists in EIA processes: Edition 1.*

6.2 Evaluation Impacts

6.2.1 Discussion: Evaluation of Results and Impacts

Previous studies conducted in the larger Eastern Cape landscape around the project area suggest an immensely rich and diverse archaeological landscape. The St Francis landscape has been developed extensively during the last decades where large portions of land have been transformed for agriculture and urbanization. In addition, coastal erosion, development and previous rehabilitation projects have transformed much of the coastal dunes in the project area. Cognisance should be taken of archaeological material that might be present in surface and sub-surface deposits.

6.2.2 Archaeology

The study did not identify archaeological sites or features in the project area but the project is situated in the larger archaeological coastal sensitivity zone of St Francis where shell middens and other archaeological sites/materials are found. As such, care should be taken not to destroy previously undetected heritage remains.

6.2.3 Built Environment

A large number of Contemporary Period structures and buildings occur in the project along the St Francis beach but these buildings are not significant in terms of the historical built environment *per se*. Impact on old buildings, structures or features as not anticipated.

6.2.4 Cultural Landscape

The larger area comprises a rich cultural horizon and the natural landscape surrounding the proposed project encompasses vast coastlines and river valleys, typical of the Eastern Cape coast. The cultural landscape holds Herder, Iron Age remains and a Colonial Period frontier which embraces a regional history, represented in a number of significant archeological sites. However, the proposed project is unlikely to result in a significant impact on the general cultural landscape of this area.

6.2.5 Graves / Human Burials Sites

No burial sites were located in the study area. It should be noted that graves and cemeteries often occur within settlements or around homesteads in the rural areas of the Eastern Cape, and they are also randomly scattered around archaeological and historical settlements. The probability of informal human burials encountered during development should thus not be excluded. In addition, human remains and burials are commonly found close to archaeological sites; they may be found in "lost" graveyards, or occur sporadically anywhere as a result of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Human remains are usually observed when they are exposed through erosion. In some instances packed stones or rocks may indicate the presence of informal pre-colonial burials. If any human bones are found during the course of construction work then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial they would need to be exhumed under a permit from SAHRA (for pre-colonial burials as well as burials later than about AD 1500). Should any unmarked human burials/remains be found during the course of construction, work in the immediate vicinity should cease and the find must immediately be reported to the archaeologist, or the South African Heritage Resources Agency (SAHRA). Under no circumstances may burials be disturbed or removed until such time as necessary statutory procedures required for grave relocation have been met.

6.3 Management actions

Recommendations for relevant heritage resource management actions are vital to the conservation of heritage resources. A general guideline for recommended management actions is included in Section 11.4 of Addendum 2.

OBJECTIVE: ensure conservation of heritage resources of significance, prevent unnecessary disturbance and/or destruction of previously undetected heritage receptors.

As no archeological features were noted in the project area and cognizant of the transformed state of the frontage, no mitigation measures need to be undertaken. However, the following general recommendations are made for heritage management:

PROJECT COMPONENT/S	All phases of construction and operation.		
POTENTIAL IMPACT	Damage/destruction of sites.		
ACTIVITY RISK/SOURCE	Digging foundations and trenches into sensitive deposits that are not visible at the surface.		
MITIGATION: TARGET/OBJECTIVE	To conserve the historical fabric of the sites and to locate undetected heritage remains as soon as possible after disturbance so as to maximize the chances of successful rescue/mitigation work.		
MITIGATION: ACTION/CONTROL		**RESPONSIBILITY**	**TIMEFRAME**
Fixed Mitigation Procedure (**required**)			
Site Monitoring: All construction activities must be monitored by an archaeologist/heritage practitioner or alternatively a person must be specially trained, for example the ECO, to conduct the monitoring. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.		ECO, HERITAGE ASSESSMENT PRACTITIONER	Monitor as frequently as practically possible.
PERFORMANCE INDICATOR	Archaeological sites are discovered and mitigated with the minimum amount of unnecessary disturbance.		
MONITORING	Successful location of sites by person/s monitoring.		

7 RECOMMENDATIONS

The larger landscape of the Eastern Cape Province and the St Francis area is immensely rich in pre-historical and historical remnants since the area is highly suitable for pre-colonial habitation. The St Francis landscape has been developed extensively during the last decades where large portions of land have been transformed for agriculture and urbanization. In addition, coastal erosion, development and previous rehabilitation projects have transformed much of the coastal dunes in the project area. Cognisance should be taken of archaeological material that might be present in surface and sub-surface deposits. The following recommendations are made based on general observations in the proposed St Francis Bay Coastal Protection Project in terms of heritage resources management.

- The archeological site survey did not locate any archaeological sites or material in the project area of the St Francis Bay Coastal Protection Project area and it is highly likely that heritage sites may have been lost due to coastal erosion, through coastal development or during previous ocean front rehabilitation projects where by extensive revetments were constructed in recent years. It should be noted that the “Community Garden” and the “Two Harbour Walk” situated to the south of the project area near Harbour Road could hold meaning and significance to local residents and potential impact to these receptors should be addressed during the Public Participation process for the project.

- Considering the localised nature of heritage remains, the general monitoring of the development progress is recommended for all stages of the project. Here, all construction activities must be monitored by an archaeologist/heritage practitioner or alternatively a person must be specially trained, for example the ECO, to conduct the monitoring**.** Construction managers / foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. Should any subsurface palaeontological, archaeological or historical material, or burials be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately.
- It is essential that cognisance be taken of the larger archaeological landscape of the area in order to avoid the destruction of previously undetected heritage sites. It should be stated that it is likely that undetected archaeological remains might occur elsewhere in the project landscape in subsurface despots, along pristine coast dune-velds, near water sources and drainage lines and fountains which would often have attracted human activity in the past. Also, since Stone Age material seems to originate from below present soil surfaces in eroded areas, the larger landscape should be regarded as potentially sensitive in terms of possible subsurface deposits. As Palaeontological remains occur where bedrock has been exposed, all geological features should be regarded as sensitive.

8 GENERAL COMMENTS AND CONDITIONS

This AIA report serves to confirm the extent and significance of the heritage landscape of the proposed St Francis Bay Coastal Protection Project area. The larger heritage horizon encompasses rich and diverse archaeological landscapes and cognisance should be taken of heritage resources and archaeological material that might be present in surface and sub-surface deposits. If, during construction, any possible archaeological material culture discoveries are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

If such sites were to be encountered or impacted by any proposed developments, recommendations contained in this report, as well as endorsement of mitigation measures as set out by SAHRA, the National Resources Act and the CRM section of ASAPA will be required. It must be emphasised that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, represent the area's complete archaeological legacy. Many sites/features may be covered by soil and vegetation and might only be located during sub-surface investigations. If subsurface archaeological deposits, artefacts or skeletal material were to be recovered in the area during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately **(*cf*. NHRA (Act No. 25 of 1999)**, Section 36 (6)). It must also be clear that Archaeological Specialist Reports will be assessed by the relevant heritage resources authority (SAHRA).

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10 ADDENDUM 1: HERITAGE LEGISLATION BACKGROUND

10.1 CRM: Legislation, Conservation and Heritage Management

The broad generic term Cultural Heritage Resources refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

10.1.1 Legislation regarding archaeology and heritage sites

The South African Heritage Resources Agency (SAHRA) and their provincial offices aim to conserve and control the management, research, alteration and destruction of cultural resources of South Africa. It is therefore vitally important to adhere to heritage resource legislation at all times.

d. National Heritage Resources Act No 25 of 1999, section 35

According to the National Heritage Resources Act of 1999 a historical site is any identifiable building or part thereof, marker, milestone, gravestone, landmark or tell older than 60 years. This clause is commonly known as the "60-years clause". Buildings are amongst the most enduring features of human occupation, and this definition therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Iron Age settlements. "Tell" refers to the evidence of human existence which is no longer above ground level, such as building foundations and buried remains of settlements (including artefacts). The Act identifies heritage objects as:

- objects recovered from the soil or waters of South Africa including archaeological and palaeontological objects, meteorites and rare geological specimens
- visual art objects
- military objects
- numismatic objects
- objects of cultural and historical significance
- objects to which oral traditions are attached and which are associated with living heritage
- objects of scientific or technological interest
- any other prescribed category

With regards to activities and work on archaeological and heritage sites this Act states that:

"No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit by the relevant provincial heritage resources authority." (34. [1] 1999:58)

and

"No person may, without a permit issued by the responsible heritage resources authority-

(d) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;

(e) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

(f) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

(g) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites. (35. [4] 1999:58)."

and

"No person may, without a permit issued by SAHRA or a provincial heritage resources agency-

(h) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(i) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;

(j) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals (36. [3] 1999:60)."

e. Human Tissue Act of 1983 and Ordinance on the Removal of Graves and Dead Bodies of 1925

Graves 60 years or older are heritage resources and fall under the jurisdiction of both the National Heritage Resources Act and the Human Tissues Act of 1983. However, graves younger than 60 years are specifically protected by the Human Tissues Act (Act 65 of 1983) and the Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) as well as any local and regional provisions, laws and by-laws. Such burial places also fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

10.1.2 Background to HIA and AIA Studies

South Africa's unique and non-renewable archaeological and palaeontological heritage sites are 'generally' protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. Heritage sites are frequently threatened by development projects and both the environmental and heritage legislation require impact assessments (HIAs & AIAs) that identify all heritage resources in areas to be developed. Particularly, these assessments are required to make recommendations for protection or mitigation of the impact of the sites. HIAs and AIAs should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources including archaeological and palaeontological sites that might occur in areas of developed and (b) make recommendations for protection or mitigation of the impact on the sites. The National Heritage Resources Act (Act No. 25 of 1999, section 38) provides guidelines for Cultural Resources Management and prospective developments:

***"38.** (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as:*

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear

development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50m in length;

(c) any development or other activity which will change the character of a site:

(i) exceeding 5 000 m^2 in extent; or

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) the re-zoning of a site exceeding 10 000 m^2 in extent; or

(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development."

And:

"The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

(k) The identification and mapping of all heritage resources in the area affected;

(l) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;

(m) an assessment of the impact of the development on such heritage resources;

(n) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;

(o) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;

(p) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and

(q) plans for mitigation of any adverse effects during and after the completion of the proposed development (38. [3] 1999:64)."

Consequently, section 35 of the Act requires Heritage Impact Assessments (HIAs) or Archaeological Impact Assessments (AIAs) to be done for such developments in order for all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual, linguistic or technological value or significance to be protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects. Heritage resources management and conservation.

10.2 Assessing the Significance of Heritage Resources

Archaeological sites, as previously defined in the National Heritage Resources Act (Act 25 of 1999) are places in the landscape where people have lived in the past – generally more than 60 years ago – and have left traces of their presence behind. In South Africa, archaeological sites include hominid fossil sites, places where people of the Earlier, Middle and Later Stone Age lived in open sites, river gravels, rock shelters and caves, Iron Age sites, graves, and a variety of historical sites and structures in rural areas, towns and cities. Palaeontological sites are those with fossil remains of plants and animals where people were not involved in the accumulation of the deposits. The basic principle of cultural heritage conservation is that archaeological and other heritage sites are valuable, scarce and *non-renewable.* Many such sites are unfortunately lost on a daily basis through development for housing, roads and infrastructure and once archaeological sites are damaged, they cannot be re-created as site integrity and authenticity is permanently lost. Archaeological sites have the potential to contribute to our understanding of the history of the region and of our country and continent. By preserving links with our past, we may not be able to revive lost cultural traditions, but it enables us to appreciate the role they have played in the history of our country.

- Categories of significance

Rating the significance of archaeological sites, and consequently grading the potential impact on the resources is linked to the significance of the site itself. The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences. The guidelines as provided by the NHRA (Act No. 25 of 1999) in Section 3, with special reference to subsection 3 are used when determining the cultural significance or other special value of archaeological or historical sites. In addition, ICOMOS (the Australian Committee of the International Council on Monuments and Sites) highlights four cultural attributes, which are valuable to any given culture:

- *Aesthetic value:*

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria include consideration of the form, scale, colour, texture and material of the fabric, the general atmosphere associated with the place and its uses and also the aesthetic values commonly assessed in the analysis of landscapes and townscape.

- *Historic value:*

Historic value encompasses the history of aesthetics, science and society and therefore to a large extent underlies all of the attributes discussed here. Usually a place has historical value because of some kind of influence by an event, person, phase or activity.

- *Scientific value:*

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality and on the degree to which the place may contribute further substantial information.

- *Social value:*

Social value includes the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a certain group.

It is important for heritage specialist input in the EIA process to take into account the heritage management structure set up by the NHR Act. It makes provision for a 3-tier system of management including the South Africa Heritage Resources Agency (SAHRA) at a national level, Provincial Heritage Resources Authorities

(PHRAs) at a provincial and the local authority. The Act makes provision for two types or forms of protection of heritage resources; i.e. formally protected and generally protected sites:

Formally protected sites:

- Grade 1 or national heritage sites, which are managed by SAHRA
- Grade 2 or provincial heritage sites, which are managed by the provincial HRA (MP-PHRA).
- Grade 3 or local heritage sites.

Generally protected sites:

- Human burials older than 60 years.
- Archaeological and palaeontological sites.
- Shipwrecks and associated remains older than 60 years.
- Structures older than 60 years.

With reference to the evaluation of sites, the certainty of prediction is definite, unless stated otherwise and if the significance of the site is rated high, the significance of the impact will also result in a high rating. The same rule applies if the significance rating of the site is low. The significance of archaeological sites is generally
ranked into the following categories.

Significance	Rating Action
No significance: sites that do not require mitigation.	None
Low significance: sites, which may require mitigation.	2a. Recording and documentation (Phase 1) of site; no further action required 2b. Controlled sampling (shovel test pits, auguring), mapping and documentation (Phase 2 investigation); permit required for sampling and destruction
Medium significance: sites, which require mitigation.	3. Excavation of representative sample, C14 dating, mapping and documentation (Phase 2 investigation); permit required for sampling and destruction [including 2a & 2b]
High significance: sites, where disturbance should be avoided.	4a. Nomination for listing on Heritage Register (National, Provincial or Local) (Phase 2 & 3 investigation); site management plan; permit required if utilised for education or tourism
High significance: Graves and burial places	4b. Locate demonstrable descendants through social consulting; obtain permits from applicable legislation, ordinances and regional by-laws; exhumation and reinternment [including 2a, 2b & 3]

Furthermore, the significance of archaeological sites was based on six main criteria:

- Site integrity (i.e. primary vs. secondary context),
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter),
- Social value,
- Uniqueness, and
- Potential to answer current and future research questions.

A fundamental aspect in assessing the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data / information, which would otherwise be lost.

11 ADDENDUM 2: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF HERITAGE

11.1 Site Significance Matrix

According to the NHRA, Section 2(vi) the **significance** of heritage sites and artefacts is determined by it aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these. The following matrix is used for assessing the significance of each identified site/feature.

2. SITE EVALUATION			
2.1 Heritage Value (NHRA, section 2 [3])	High	Medium	Low
It has importance to the community or pattern of South Africa's history or pre-colonial history.			
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.			
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.			
It is of importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.			
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.			
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.			
It has marked or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).			
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.			
It has significance through contributing towards the promotion of a local sociocultural identity and can be developed as a tourist destination.			
It has significance relating to the history of slavery in South Africa.			
It has importance to the wider understanding of temporal changes within cultural landscapes, settlement patterns and human occupation.			
2.2 Field Register Rating			
National/Grade 1 [should be registered, retained]			
Provincial/Grade 2 [should be registered, retained]			
Local/Grade 3A [should be registered, mitigation not advised]			
Local/Grade 3B [High significance; mitigation, partly retained]			
Generally Protected A [High/Medium significance, mitigation]			
Generally protected B [Medium significance, to be recorded]			
Generally Protected C [Low significance, no further action]			
2.3 Sphere of Significance	High	Medium	Low
International			
National			
Provincial			
Local			
Specific community			

11.2 Impact Assessment Criteria

The following table provides a guideline for the rating of impacts and recommendation of management actions for sites of heritage potential.

Significance of the heritage resource

This is a statement of the nature and degree of significance of the heritage resource being affected by the activity. From a heritage management perspective, it is useful to distinguish between whether the significance is embedded in the physical fabric or in associations with events or persons or in the experience of a place; i.e. its visual and non-visual qualities. This statement is a primary informant to the nature and degree of significance of an impact and thus needs to be thoroughly considered. Consideration needs to be given to the significance of a heritage resource at different scales (i.e. site-specific, local, regional, national or international) and the relationship between the heritage resource, its setting and its associations.

Nature of the impact

This is an assessment of the nature of the impact of the activity on a heritage resource, with some indication of its positive and/or negative effect/s. It is strongly informed by the statement of resource significance. In other words, the nature of the impact may be historical, aesthetic, social, scientific, linguistic or architectural, intrinsic, associational or contextual (visual or non-visual). In many cases, the nature of the impact will include more than one value.

Extent

Here it should be indicated whether the impact will be experienced:

- On a site scale, i.e. extend only as far as the activity;
- Within the immediate context of a heritage resource;
- On a local scale, e.g. town or suburb
- On a metropolitan or regional scale; or
- On a national/international scale.

Duration

Here it should be indicated whether the lifespan of the impact will be:

- Short term, (needs to be defined in context)
- Medium term, (needs to be defined in context)
- Long term where the impact will persist indefinitely, possibly beyond the operational life of the activity, either because of natural processes or by human intervention; or
- Permanent where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.

Of relevance to the duration of an impact are the following considerations:

- Reversibility of the impact; and
- Renewability of the heritage resource.

Intensity

Here it should be established whether the impact should be indicated as:

- Low, where the impact affects the resource in such a way that its heritage value is not affected;
- Medium, where the affected resource is altered but its heritage value continues to exist albeit in a modified way; and
- High, where heritage value is altered to the extent that it will temporarily or permanently be damaged or destroyed.

Probability

This should describe the likelihood of the impact actually occurring indicated as:

- Improbable, where the possibility of the impact to materialize is very low either because of design or historic experience;
- Probable, where there is a distinct possibility that the impact will occur;
- Highly probable, where it is most likely that the impact will occur; or
- Definite, where the impact will definitely occur regardless of any mitigation measures

Confidence

This should relate to the level of confidence that the specialist has in establishing the nature and degree of impacts. It relates to the level and reliability of information, the nature and degree of consultation with I&AP's and the dynamic of the broader socio-political context.

- High, where the information is comprehensive and accurate, where there has been a high degree of consultation and the socio-political context is relatively stable.
- Medium, where the information is sufficient but is based mainly on secondary sources, where there has been a limited targeted consultation and socio-political context is fluid.
- Low, where the information is poor, a high degree of contestation is evident and there is a state of socio-political flux.

Impact Significance

The significance of impacts can be determined through a synthesis of the aspects produced in terms of the nature and degree of heritage significance and the nature, duration, intensity, extent, probability and confidence of impacts and can be described as:

- Low; where it would have a negligible effect on heritage and on the decision
- Medium, where it would have a moderate effect on heritage and should influence the decision.
- High, where it would have, or there would be a high risk of, a big effect on heritage. Impacts of high significance should have a major influence on the decision;
- Very high, where it would have, or there would be high risk of, an irreversible and possibly irreplaceable negative impact on heritage. Impacts of very high significance should be a central factor in decision-making.

11.3 Direct Impact Assessment Criteria

The following table provides an outline of the relationship between the significance of a heritage context, the intensity of development and the significance of heritage impacts to be expected

	TYPE OF DEVELOPMENT			
HERITAGE CONTEXT	**CATEGORY A**	**CATEGORY B**	**CATEGORY C**	**CATEGORY D**
CONTEXT 1 High heritage Value	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected	Very high heritage impact expected
CONTEXT 2 Medium to high heritage value	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected
CONTEXT 3 Medium to low heritage value	Little or no heritage impact expected	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected
CONTEXT 4 Low to no heritage value	Little or no heritage impact expected	Little or no heritage impact expected	Minimal heritage value expected	Moderate heritage impact expected

NOTE: A DEFAULT "LITTLE OR NO HERITAGE IMPACT EXPECTED" VALUE APPLIES WHERE A HERITAGE RESOURCE OCCURS OUTSIDE THE IMPACT ZONE OF THE DEVELOPMENT.

HERITAGE CONTEXTS	CATEGORIES OF DEVELOPMENT
Context 1: Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2 or 3A heritage resources **Context 2:** Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources. **Context 3:**	**Category A: Minimal intensity development** - No rezoning involved; within existing use rights. - No subdivision involved. - Upgrading of existing infrastructure within existing envelopes - Minor internal changes to existing structures - New building footprints limited to less than 1000m2. **Category B: Low-key intensity development** - Spot rezoning with no change to overall zoning of a site. - Linear development less than 100m

Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources **Context 4:** Of little or no intrinsic, associational or contextual heritage value due to disturbed, degraded conditions or extent of irreversible damage.	- Building footprints between 1000m2-2000m2 - Minor changes to external envelop of existing structures (less than 25%) - Minor changes in relation to bulk and height of immediately adjacent structures (less than 25%). **Category C: Moderate intensity development** - Rezoning of a site between 5000m2-10 000m2. - Linear development between 100m and 300m. - Building footprints between 2000m2 and 5000m2 - Substantial changes to external envelop of existing structures (more than 50%) - Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 50%) **Category D: High intensity development** - Rezoning of a site in excess of 10 000m2 - Linear development in excess of 300m. - Any development changing the character of a site exceeding 5000m2 or involving the subdivision of a site into three or more erven. - Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 100%)

11.4 Management and Mitigation Actions

The following table provides a guideline of relevant heritage resources management actions is vital to the conservation of heritage resources.

No further action / Monitoring

Where no heritage resources have been documented, heritage resources occur well outside the impact zone of any development or the primary context of the surroundings at a development footprint has been largely destroyed or altered, no further immediate action is required. Site monitoring during development, by an ECO or the heritage specialist are often added to this recommendation in order to ensure that no undetected heritage\ remains are destroyed.

Avoidance

This is appropriate where any type of development occurs within a formally protected or significant or sensitive heritage context and is likely to have a high negative impact. Mitigation is not acceptable or not possible. This measure often includes the change / alteration of development planning and therefore impact zones in order not to impact on resources.

Mitigation

This is appropriate where development occurs in a context of heritage significance and where the impact is such that it can be mitigated to a degree of medium to low significance, e.g. the high to medium impact of a development on an archaeological site could be mitigated through sampling/excavation of the remains. Not all negative impacts can be mitigated.

Compensation

Compensation is generally not an appropriate heritage management action. The main function of management actions should be to conserve the resource for the benefit of future generations. Once lost it cannot be renewed. The circumstances around the potential public or heritage benefits would need to be exceptional to warrant this type of action, especially in the case of where the impact was high.

Rehabilitation

Rehabilitation is considered in heritage management terms as a intervention typically involving the adding of a new heritage layer to enable a new sustainable use. It is not appropriate when the process necessitates the removal of previous historical layers, i.e. restoration of a building or place to the previous state/period. It is an appropriate heritage management action in the following cases:

- The heritage resource is degraded or in the process of degradation and would benefit from rehabilitation.
- Where rehabilitation implies appropriate conservation interventions, i.e. adaptive reuse, repair and maintenance, consolidation and minimal loss of historical fabric.
- Where the rehabilitation process will not result in a negative impact on the intrinsic value of the resource.

Enhancement